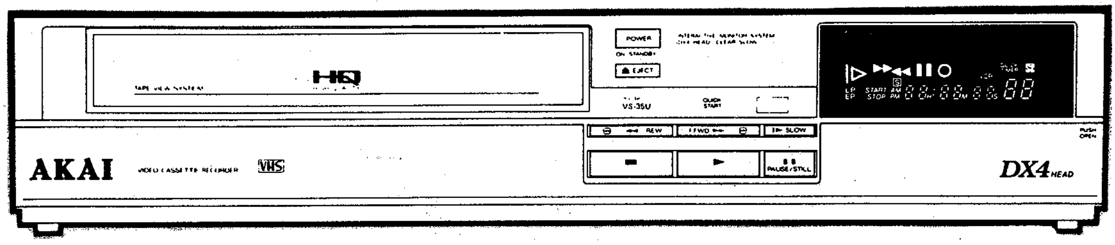
V04934

# AKAI SERVICE MANUAL



## VIDEO CASSETTE RECORDER

## MODEL VS-35U
## MODEL VS-33U/UM

## SPECIFICATIONS

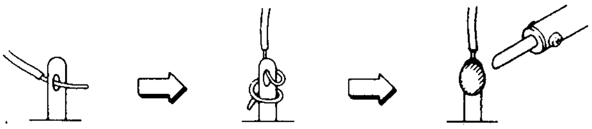
| | |
|---|---|
| Format | VHS standard |
| Video recording system | Rotary, slant azimuth two-head helical scan system |
| Rotary heads | 4 video heads |
| RF input | System M<br>VHF ch 2 – 6, 7 – 13<br>UHF ch 14 – 83<br>CABLE ch A-1, A-2, A – I, J – W |
| RF output | System M type modulation<br>VHF ch 3, 4 switchable<br>(preset ch 4) |
| Recording (line input) | 525/60, NTSC |
| Playback (line output) | 525/60, NTSC |
| Video | |
| Line input level | 0.5 – 2.0 Vp-p/75 ohms, unbalanced |
| Line output level | 1.0 Vp-p/75 ohms, unbalanced |
| S/N ratio | more than 45 dB |
| Horizontal resolution | more than 240 lines (SP mode) |
| Audio | |
| Line input level | –8 dBm/50 K ohms, unbalanced |
| Line output level | –6 dBm/ 1 K ohms, unbalanced |
| S/N ratio | more than 40 dB |
| Frequency response | 70 – 10,000 Hz (SP mode) |
| Recording/playback time | 160 min. with T-160 cassette on SP mode<br>480 min. with T-160 cassette on EP mode |
| Tape speed | |
| SP mode | 33.35 mm/sec. (1-5/16 i.p.s.) |
| LP mode | 16.68 mm/sec. (PB only)<br>(21/32 i.p.s.) |
| EP mode | 11.12 mm/sec. (7/16 i.p.s.) |
| Quick finder | |
| SP mode | approx. 7 times normal speed |
| EP mode | approx. 9 times normal speed |
| FF, REW time | approx. 5 min.<br>with T-120 cassette |
| Timer | |
| Program VS-35 | 8 program/1 month and QUICK TIMER |
| VS-33 | 4 program/1 month and QUICK TIMER |
| Clock reference | Quartz crystal |
| Display | TV screen & FL<br>(Tape counter, Timer etc.) |
| Power requirements | 120 V AC, 60 Hz<br>(VS-33U, VS-35U)<br>110/220 V AC, 50/60 Hz<br>(VS-33UM) |
| Power consumption | U: 25W, UM: 21W |
| Operating temperature | 5°C – 40°C |
| Dimensions | 16.5 (W) x 3.3 (H) x 13.4 (D) inches<br>(425 x 84 x 340 mm) |
| Weight | 12.1 lbs (5.5 Kg) |

* For improvement purposes, specifications and design are subject to change without notice.

# ★SAFETY INSTRUCTIONS

## PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ symbol parts are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locatoins.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

## SAFETY CHECK AFTER SERVICING

Confirm the specified insulation resistance between power cord plug prongs and externally exposed parts of the set is greater than 10 M ohms. but for equipment with external antenna terminals (tuner, receiver, etc.) and is intended for $\boxed{C}$ or $\boxed{A}$, specified insulation resistance should be headphone jacks line-in-out jacks etc. more than 2.2 M ohms (ground terminals, microphone jacks).

# ★INFORMATION

## Quick Start function

This VCR contains the Quick Start function.
This means that when a cassette tape is inserted into the VCR or the Power is turned on with a cassette tape in the VCR, the tape will be loaded automatically, and at the same time QUICK START indicator will be turned on and the Drum Motor will be started to rotate.

* If the VCR is neglected in stop mode for several minutes, the Quick Start function will be automatically canceled. Accordingly, QUICK START indicator will be turned off and the Drum Motor will be stopped with the tape loaded. When the Power is turned off with a cassette tape in the VCR, the tape will be unloaded and remain in the VCR.

## Auto functions

This VCR contains the following Auto functions.

1. If a cassette tape is inserted when the POWER is off, the POWER will be automatically turned on.
2. If a cassette tape without its recording safety tab is inserted, the VCR will automatically begin to playback the tape.
3. While a cassette tape without its recording safety tab is in the VCR, if the REC button is pressed, the cassette tape will be ejected automatically.
4. Even if the POWER is OFF, the cassette tape can be ejected by pressing the EJECT button.
5. Between the hours of 23:00 and 6:00, if the VCR is not in use, the front panel display is automatically dimmed to a lower light level.

## EDIT switch

The EDIT switch is used only when you want to record from this VCR to another VCR. When recording on another VCR, you may not want to record the Monitor Displays as they appear on this VCR (for example, the PLAY ► indicator, STOP ■ indicator etc.), onto the new tape. In that case, set the EDIT switch to ON. Now when you press a tape transport button, the indicator appears only on the VCR's front panel display, not on the TV screen or the new tape.

## Safety Lock system (Remote control only)

This VCR's PLAY button can be locked to prevent access by small children.

To lock: With the VCR POWER ON, depress and hold the remote control's STOP button for about 8 seconds. An "L" will appear on the front panel display. Tape play will not function until the VCR is unlocked.

To unlock: Depress and hold the remote control's PLAY button for about 8 seconds.
Even if the POWER is turned off, the VCR PLAY mode will remain locked until released. Other modes will remain operable.

## INDEX SEARCH system (Remote control only)

This VCR is equipped with the INDEX SEARCH system which allows you to directly locate the beginning of any recorded segment on a tape, within 9 segments of your starting point, in either forward or reverse direction, provided the recording was made on this VCR, or providing the recording is equipped with control signals. Each time a recording is made on this VCR, i.e each time the REC button is pressed, a control signal is automatically recorded along with the program. This means that even while a recording is being made, if you press the REC button again, a new control signal is added to the tape at that point. This feature is very convenient for marking any important point on a tape.

**NOTE:** When you press the REC button to begin recording from the recording standby mode (PAUSE/STILL button), new control signals will not be added.

**Example 1:** To search 4th program

1. Insert a recorded tape.
2. Let's say you are at the beginning of the tape and you want to view the 4th program on the tape. Press the right side of the INDEX SEARCH button 4 times. The VCR display shows the number of programs being searched, 4 in this case, along with the fast forward indicator and the $\boxed{S}$ indicator. The TV display will also say Index 4. Both displays will count down as the VCR gets closer to the correct program, and then playback of segment 4 will begin automatically.

**Example 2:** To search 11th program then search 5th one from the beginning

1. Imagine that you have recorded 12 individual segments on a tape (Music videos for example). Let's say you want to view segment 11. Press the right side of the INDEX SEARCH button 9 times (the maximum). The VCR will fast forward to the beginning of segment 9 and begin playback.
2. Now press the right side of the INDEX SEARCH button 2 more times and the VCR fast forwards to segment 11 and begins playback.
3. Let's say segment 11 is finished and you want to go back and view segment 5. Since 11 is already finished, press the left side of the INDEX SEARCH button 7 times. The VCR will rewind all the way back to the beginning of segment 5 and begin playback.

## INTRO SCAN system (Remote control only)

This VCR is capable of quickly fast forwarding to the beginning of each recorded segment on a tape, briefly playing back that segment, and then fast forwarding to the next segment.

This system also works in combination with the control signal which is recorded at the beginning of each recorded segment.

Press the INTRO SCAN button on the remote control. The VCR will immediately fast forward the tape to the beginning of the program and play about the first 8 seconds. Then, the VCR will again fast forward the tape to the beginning of the next recorded segment and again playback the first 8 seconds of the program.

This operation continues until the tape is finished or until you selected another mode (such as PLAY or STOP). While INTRO SCAN is searching, the F.FWD indicator lights and the PLAY indicator flashes. When INTRO SCAN is in playback, the F.FWD indicator flashes and the PLAY indicator lights. The $\boxed{S}$ indicator lights all the time that INTRO SCAN is working.

## Double speed playback (Remote control only)

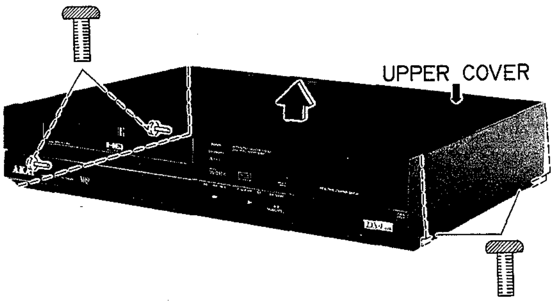
This VCR can play back a tape at twice its normal speed. (Only a tape recorded at SP speed) Press the x2 button on the remote control while the tape is in play. No sound will be head in this mode. Press PLAY to resume normal speed.

# I. DISASSEMBLY

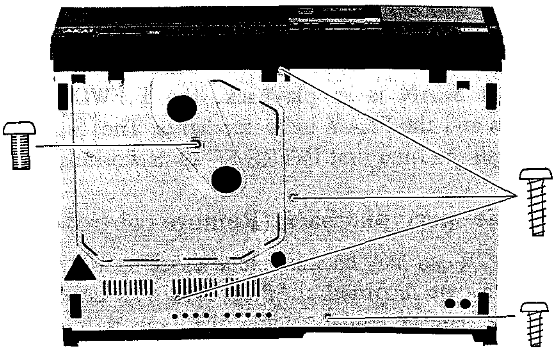
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

* Photographs employed here are of model VS-35EK.

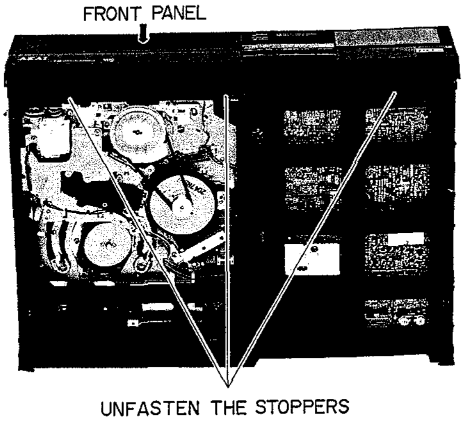
1 Removal of Upper Cover


UPPER COVER

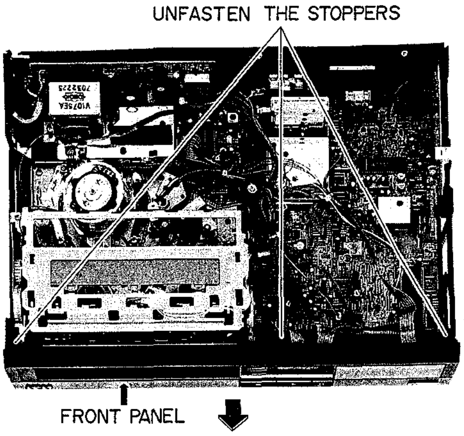
2 Removal of Bottom Cover



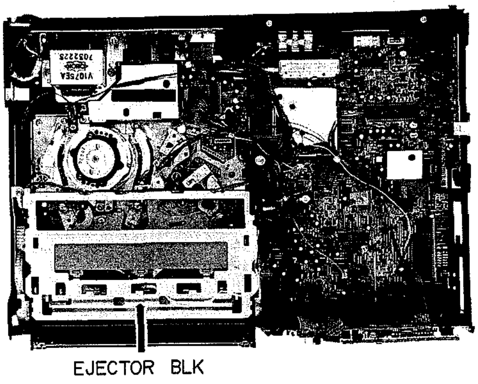
3 Removal of Front Panel


FRONT PANEL
UNFASTEN THE STOPPERS

4


UNFASTEN THE STOPPERS
FRONT PANEL

5


EJECTOR BLK

※ Please refer to "4-1-1 REMOVING THE EJECTOR BLK"

# II. CONTROLS

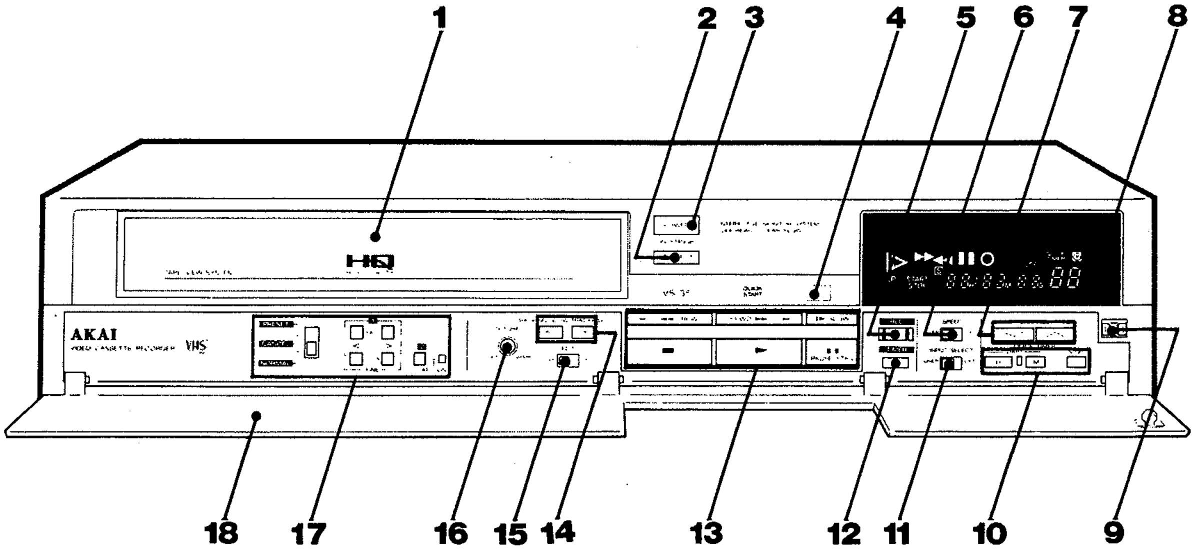


Fig. 2-1 Front View

1. **Load the video cassette tape here.**
2. **EJECT button.**
   To eject the video cassette tape.
3. **POWER button.**
   To turn on and off the Akai VCR.
4. **To receive the remote control signal from the Akai Wireless Remote Control Unit.**
   * Keep this window clean for remote control operation.
5. **REC (Recording) button.**
6. **Tape SPEED selector.**
   To set the tape speed for recording.
7. **CHANNEL selector.**
   To select a preset channel with the built-in tuner of the VCR.
8. **VCR FL (Fluorescence) display.**
   Tells you what the VCR is doing.
9. **Sub-panel door latch.**
10. **QUICK TIMER buttons.**
    To preset recording end time or quick programme recording.
11. **INPUT SELECTOR switch.**
    To switch between internal tuner and external input.
12. **TIMER button.**
    To stand by for automatic recording.
13. **Tape transport buttons.**
    To run the tape for recording or playback.
14. **TRACKING/SLOW TRACKING control.**
    To fine tune the play back picture.
15. **EDIT switch.**
    For removing the on-screen characters when making a tape on another VCR.
16. **SHARP/SOFT PICTURE control.**
    To soften or sharpen the video picture.
17. **Tuning controls.**
    To tune in preset channels.
18. **Sub-panel door.**

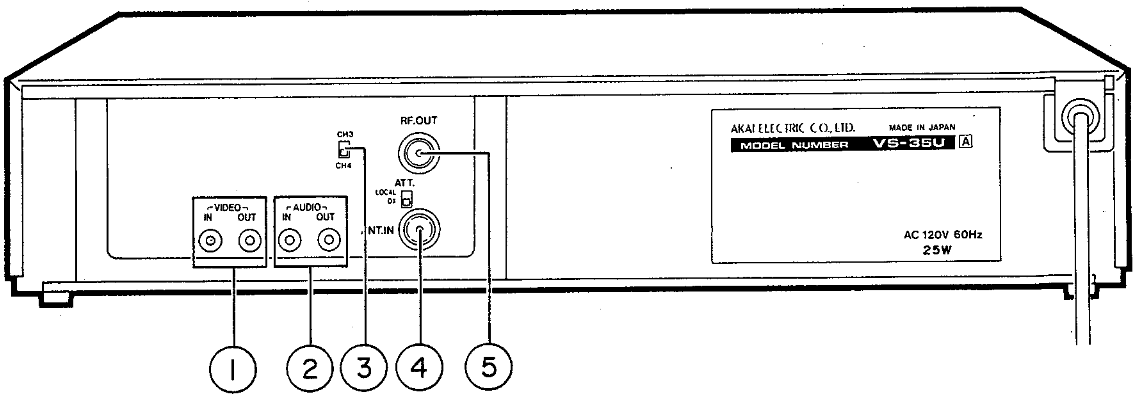
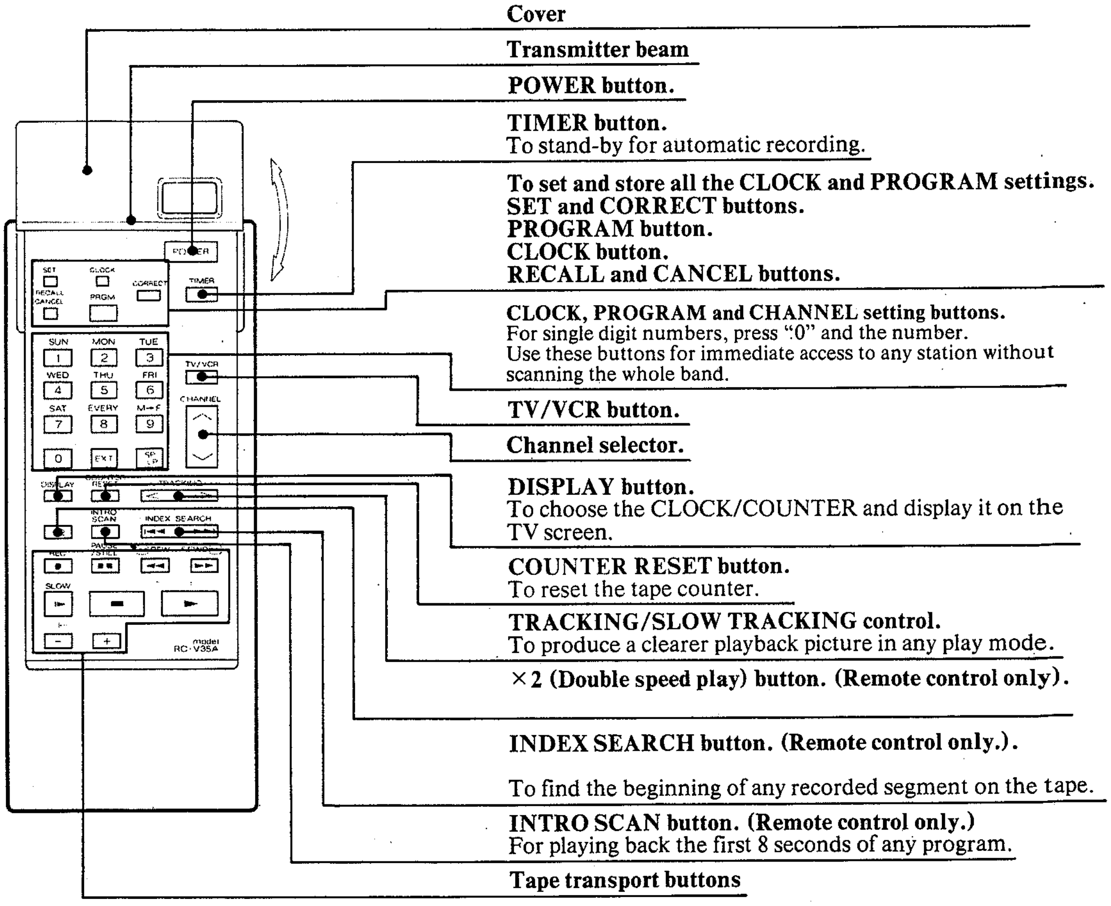

RF.OUT
CH3
CH4
ATT.
LOCAL
DX
VIDEO
IN OUT
AUDIO
IN OUT
ANT.IN
AKAI ELECTRIC CO., LTD.
MADE IN JAPAN
MODEL NUMBER VS-35U
AC 120V 60Hz
25W
1
2
3
4
5

Fig. 2-2 Rear View

1. VIDEO IN/OUT JACKS
2. AUDIO IN/OUT JACKS
3. RF OUT CH. ADJ.
4. ANT. IN JACK
5. RF OUT TERMINAL


POWER
SET
CLOCK
CORRECT
TIMER
RECALL CANCEL
PROGM
SUN
MON
TUE
WED
THU
FRI
SAT
EVERY
M→F
TV/VCR
CHANNEL
EXT
SP LP
DISPLAY
RESET
TRACKING
INTRO SCAN
INDEX SEARCH
REC
PAUSE /STILL
REW
FF
SLOW
model RC-V35A

**Cover**

**Transmitter beam**

**POWER button.**

**TIMER button.**
To stand-by for automatic recording.

**To set and store all the CLOCK and PROGRAM settings.**
**SET and CORRECT buttons.**
**PROGRAM button.**
**CLOCK button.**
**RECALL and CANCEL buttons.**

**CLOCK, PROGRAM and CHANNEL setting buttons.**
For single digit numbers, press "0" and the number.
Use these buttons for immediate access to any station without scanning the whole band.

**TV/VCR button.**

**Channel selector.**

**DISPLAY button.**
To choose the CLOCK/COUNTER and display it on the TV screen.

**COUNTER RESET button.**
To reset the tape counter.

**TRACKING/SLOW TRACKING control.**
To produce a clearer playback picture in any play mode.

**×2 (Double speed play) button. (Remote control only).**

**INDEX SEARCH button. (Remote control only.).**

To find the beginning of any recorded segment on the tape.

**INTRO SCAN button. (Remote control only.)**
For playing back the first 8 seconds of any program.

**Tape transport buttons**

Fig. 2-3 Remote Control Unit

* The remote control contains operation buttons which are used the same way as the operation buttons on the front panel of the Akai VCR, and many which appear on the remote control only. The remote control can be used from a distance of up to 5 meters.

# III. PRINCIPAL PARTS LOCATION

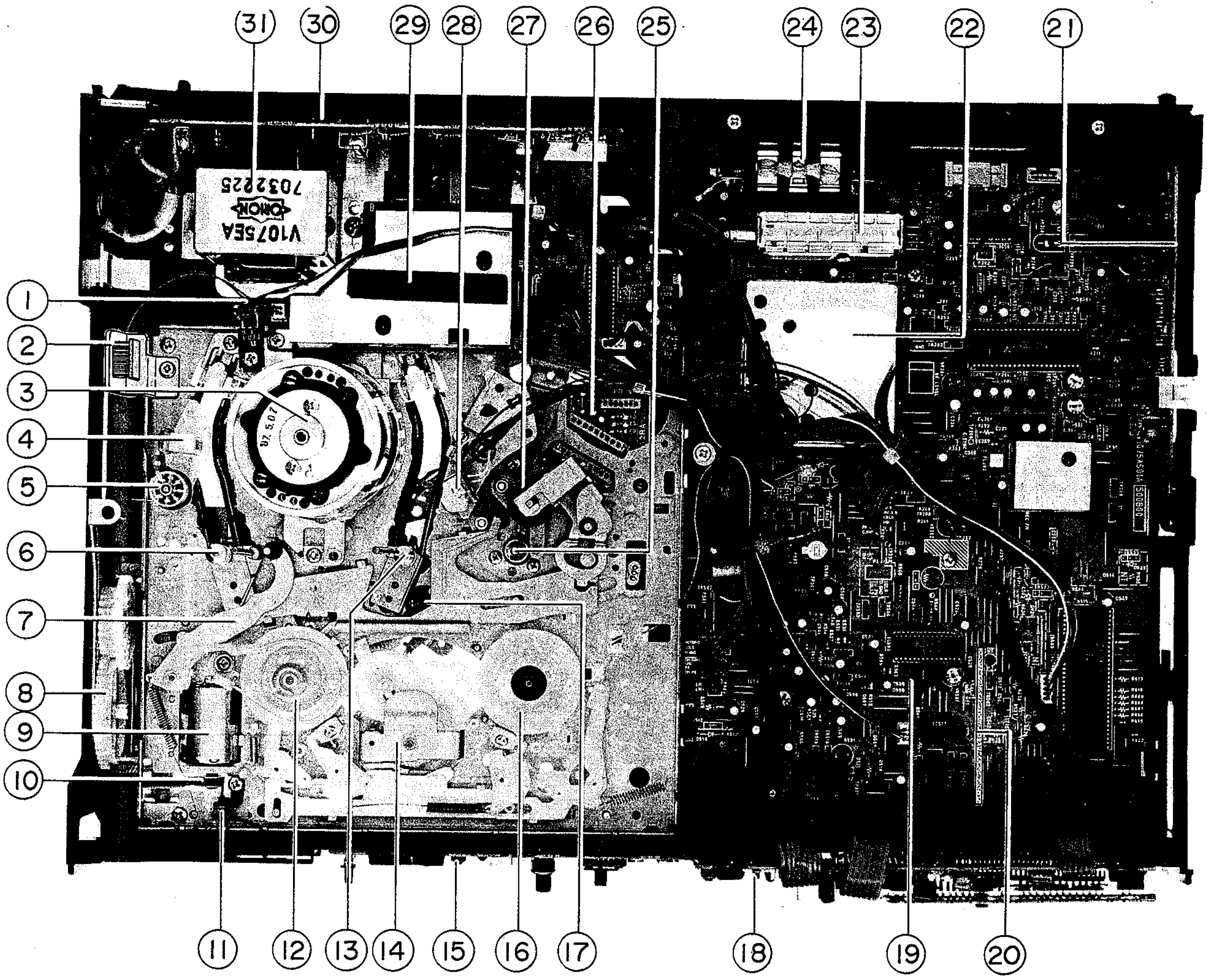

31
30
29
28
27
26
25
24
23
22
21
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

Fig. 3-1 Top View

1. TR PCB
2. DIODE PCB
3. HEAD DRUM BLK
4. FULL TRACK ERASE HEAD
5. SUPPLY TAPE GUIDE
6. S. LOADING LEADER (LEFT)
7. TENSION ARM
8. LOADING MECH. BLK.
9. LOADING MOTOR
10. LOADING BELT
11. REC SAFETY SWITCH
12. SUPPLY REEL TABLE
13. T.U. LOADING LEADER (RIGHT)
14. CLUTCH BLK
15. PRESET PCB
16. TAKE-UP REEL TABLE
17. SENSOR LED
18. OPERATION PCB
19. MAIN PCB
20. SUB PCB
21. CHROMA PCB
22. VIF UNIT
23. TUNER UNIT
24. RF CONVERTOR UNIT
25. CAPSTAN SHAFT
26. CAPSTAN MOTOR PCB
27. PINCH ROLLER
28. AUDIO/CONTROL HEAD
29. PRE AMP PCB
30. POWER SUPPLY PCB
31. POWER TRANSFORMER

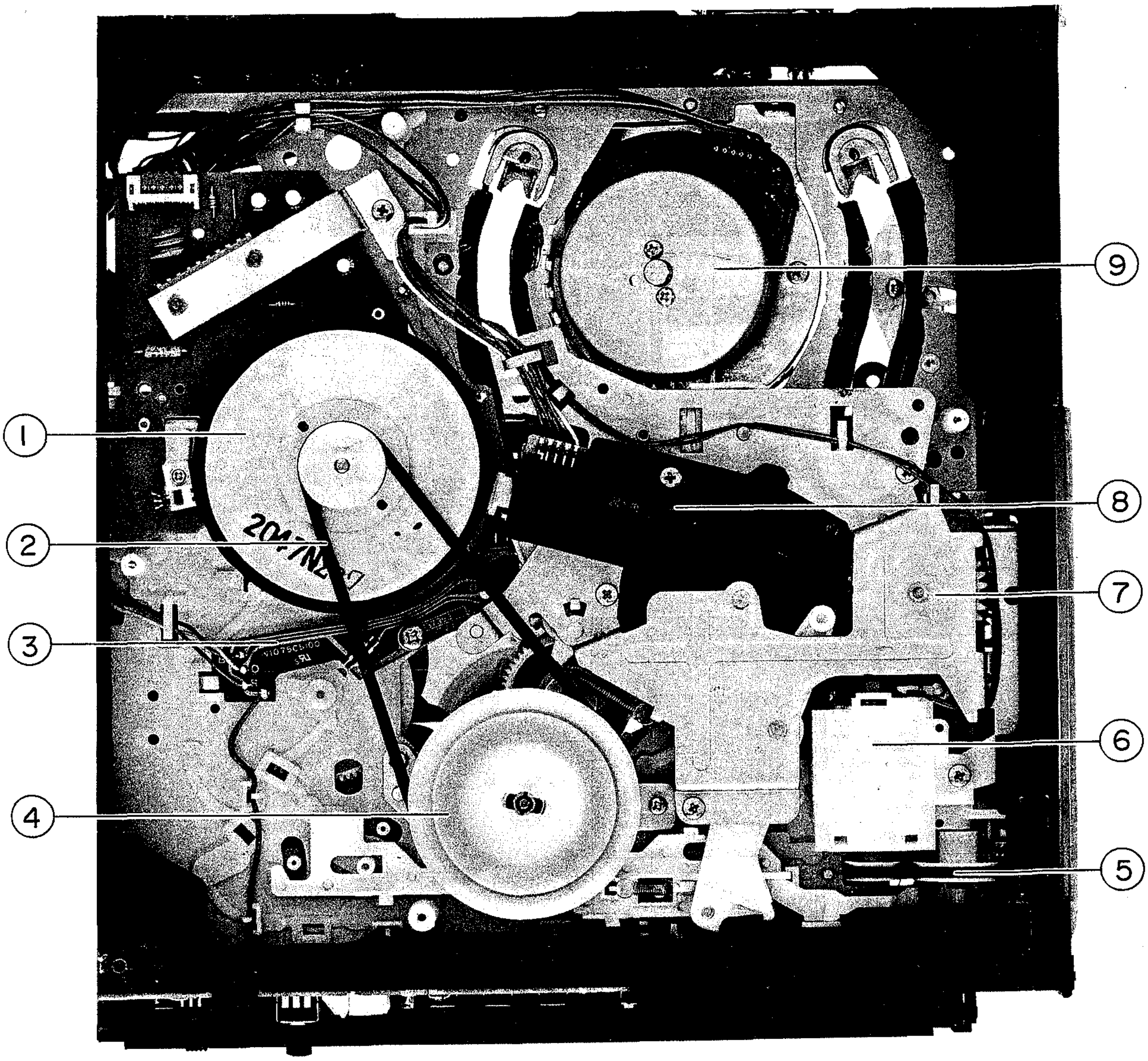


Fig. 3-2 Bottom View

1. CAPSTAN MOTOR BLK
2. IDLER BELT
3. SENSOR PCB
4. CLUTCH BLK
5. LOADING BELT
6. LOADING DRIVE BLK
7. LOADING MECH. BLK
8. MODE SELECTOR
9. DRUM MOTOR BLK

# IV. MAIN COMPONENTS REPLACEMENT

## 4-1. EJECTOR BLOCK

### 4-1-1. REMOVING THE EJECTOR BLOCK

1) Depress the POWER button to turn ON the VCR and insert the Cassette tape into the VCR. The unit get to PLAY mode itself.
2) Depress the POWER button again to turn OFF the VCR. Disconnect AC power cord after confirm that completely tape is unloaded.
3) Take off two screws Ⓐ and disconnect J504 from MAIN P.C. Board.
4) Remove the Ejector Block.

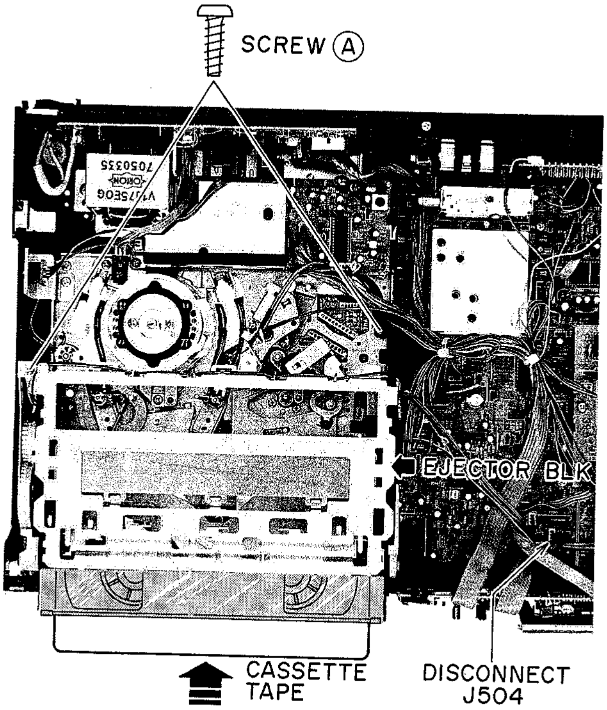

SCREW Ⓐ
EJECTOR BLK
CASSETTE TAPE
DISCONNECT J504

Fig. 4-1

### 4-1-2. INSTALLATION OF THE EJECTOR BLOCK

1) Install the Ejector Block on the MECHA. chassis as shown in Fig. 4-2.
2) Tighten two screws Ⓐ and connect J504.
3) Plug in AC POWER CORD and Depress the POWER button to turn ON the VCR.
4) Confirm that unit will function correctly.

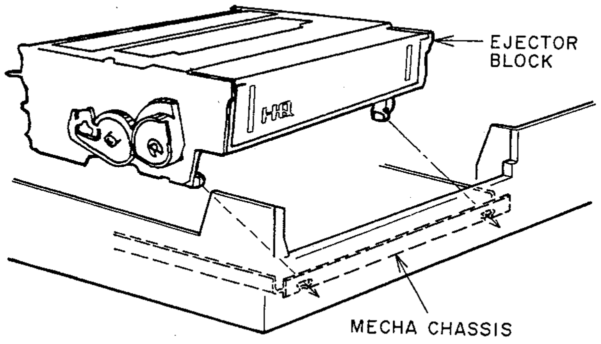

EJECTOR BLOCK
MECHA CHASSIS

Fig. 4-2

## 4-2. LOADING MECHANISM BLOCK

### 4-2-1. REMOVAL OF MECHANISM BLOCK

1) Remove the Ejector Block. (Refer to 4-1-1. EJECTOR REPLACEMENT.)
2) Take out two screws Ⓐ and remove the Transistor and the Diode.
3) Disconnect P700, P701 and P800 from the PRE-AMP P.C. Board.
4) Take out two screws Ⓑ and remove the PRE-AMP P.C. Board.

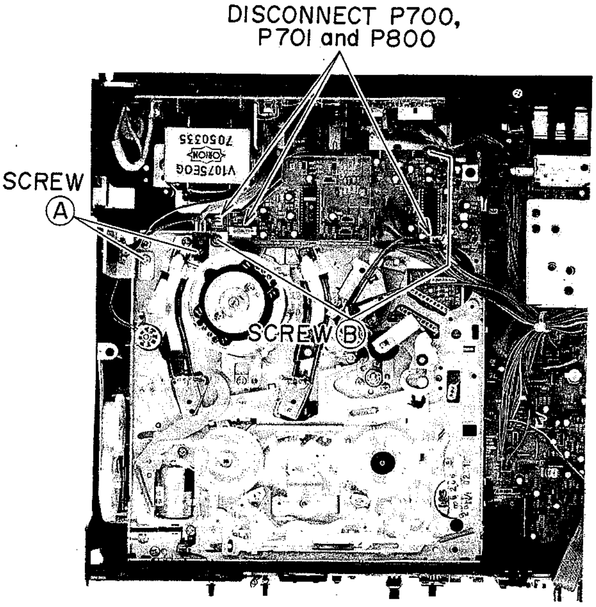

DISCONNECT P700, P701 and P800
SCREW Ⓐ
SCREW Ⓑ

Fig. 4-3

5) Disconnect P502 from the DRUM MOTOR P.C. Board on the bottom of VCR.
6) Take out three screws Ⓒ and remove the MECHA. BLK.

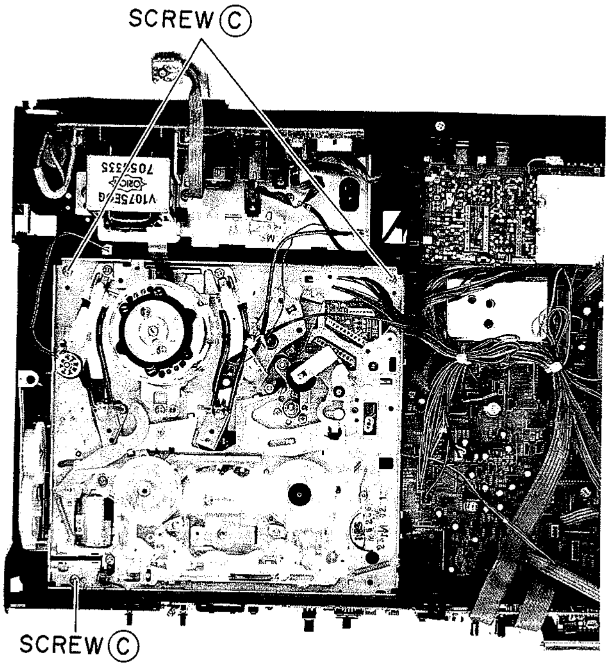

SCREW Ⓒ
SCREW Ⓒ

Fig. 4-4

## 4-2-2. REASSEMBLE OF THE LOADING MECHANISM BLOCK

1) Attach the GEAR FL DRIVE to chassis CAM GEAR PART.

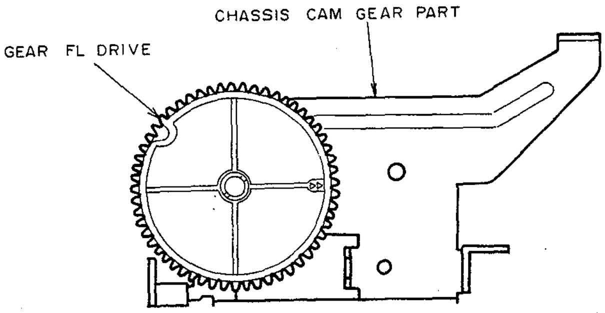

CHASSIS CAM GEAR PART
GEAR FL DRIVE

Fig. 4-5

2) Install the GEAR WARM PART as shown in Fig. 4-6.

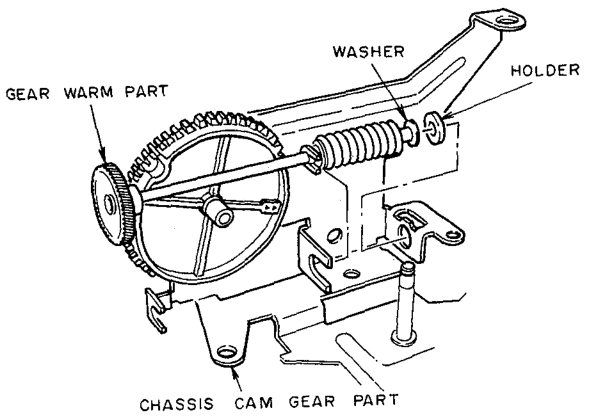

WASHER
HOLDER
GEAR WARM PART
CHASSIS CAM GEAR PART

Fig. 4-6

3) Attach the GEAR WHEEL to CHASSIS CAM GEAR PART so that the GEAR FL DRIVE mark ⓐ meets the GEAR WHEEL mark (b-1), and fasten the GEAR WHEEL with slit washer.

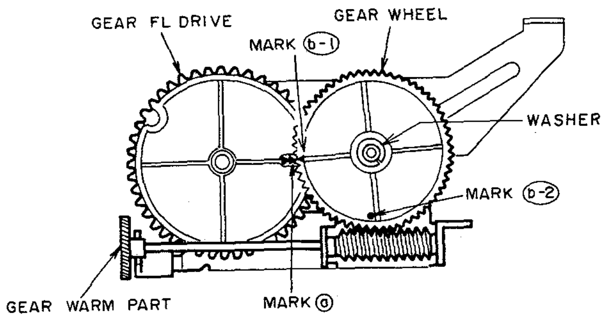

GEAR FL DRIVE
GEAR WHEEL
MARK (b-1)
WASHER
MARK (b-2)
GEAR WARM PART
MARK ⓐ

Fig. 4-7

4) Attach the LEVER CAM SLIDER as shown in Fig. 4-8.

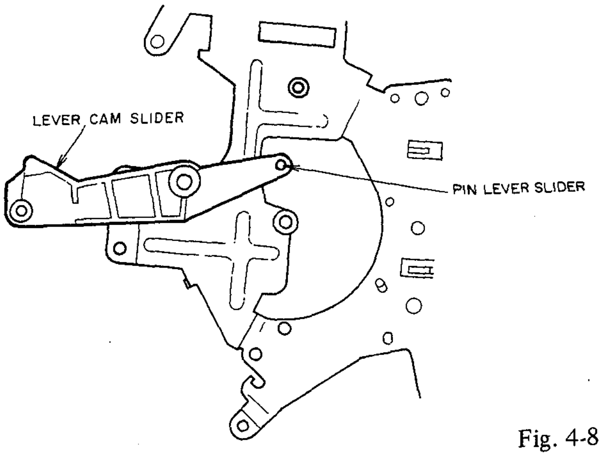

LEVER CAM SLIDER
PIN LEVER SLIDER

Fig. 4-8

5) Attach the GEAR CAM CENTER so that pin lever slider head is appeared from the hall Ⓐ of the GEAR CAM CENTER.

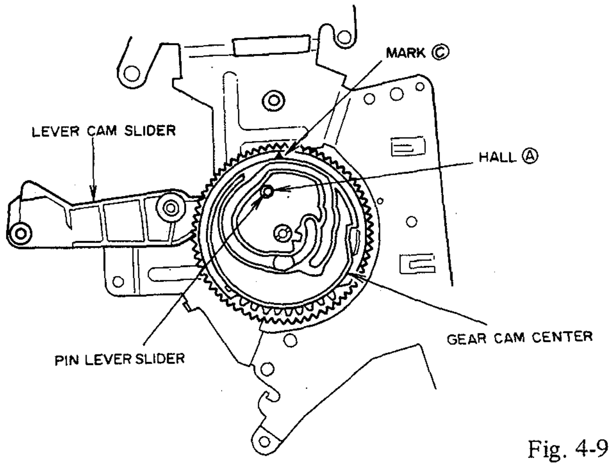

MARK Ⓒ
LEVER CAM SLIDER
HALL Ⓐ
GEAR CAM CENTER
PIN LEVER SLIDER

Fig. 4-9

6) Attach the GEAR CAM TENSION so that the GEAR CAM TENSION mark (d-1) meets the GEAR WHEEL mark (b-2), and moreover the GEAR CAM CENTER mark Ⓒ should be located between the marks (d-2) of the GEAR CAM TENSION.

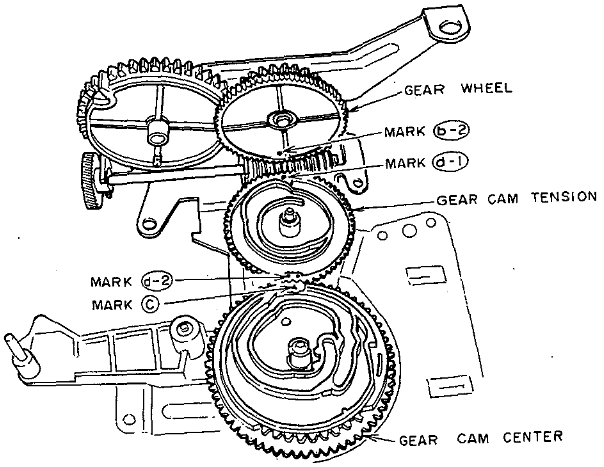

GEAR WHEEL
MARK (b-2)
MARK (d-1)
GEAR CAM TENSION
MARK (d-2)
MARK Ⓒ
GEAR CAM CENTER

Fig. 4-10

7) Attach the ARM FWD BRAKE and Spring as shown in Fig. 4-11.

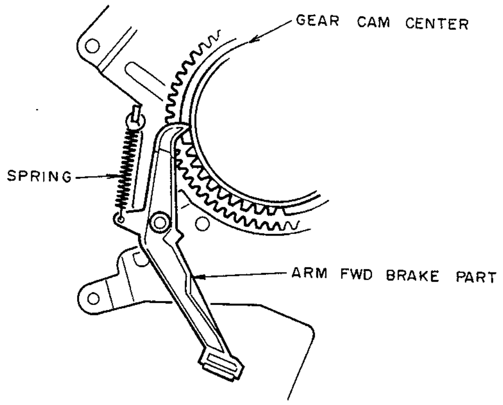

GEAR CAM CENTER
SPRING
ARM FWD BRAKE PART

Fig. 4-11

8) Set the GEAR TOGGLE (TU) and (S) to the unloaded position with your fingers. At this time meet the marks of the GEAR TOGGLE (TU) and (S) as shown in Fig. 4-12.

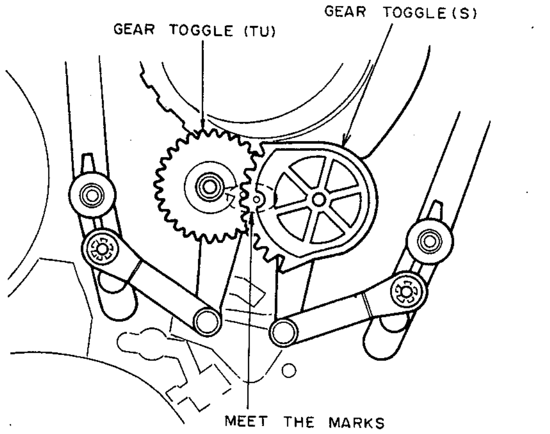

GEAR TOGGLE (S)
GEAR TOGGLE (TU)
MEET THE MARKS

Fig. 4-12

9) Attach the LOADING MECHA. BLK with holding the GEAR TOGGLE (TU) in the direction of the arrow as shown in Fig. 4-13. Tighten the LOADING MECHA BLK with four screws Ⓐ and Ⓑ.

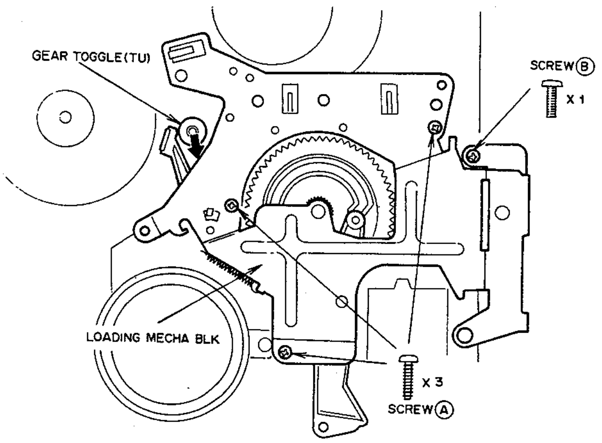

GEAR TOGGLE(TU)
SCREW(B)
x1
LOADING MECHA BLK
x3
SCREW(A)

Fig. 4-13

10) Meet the marks of MODE SELECT SW and attach the MODE SELECT SW BLK onto the LOADING MECHA BLK as shown in Fig. 4-14. Tighten the MODE SELECT SW BLK with a screw Ⓒ.

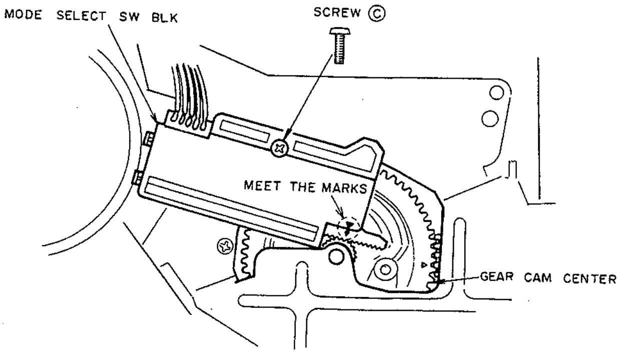

MODE SELECT SW BLK
SCREW Ⓒ
MEET THE MARKS
GEAR CAM CENTER

Fig. 4-14

11) Attach the BELT IDLER as shown in Fig. 4-15.

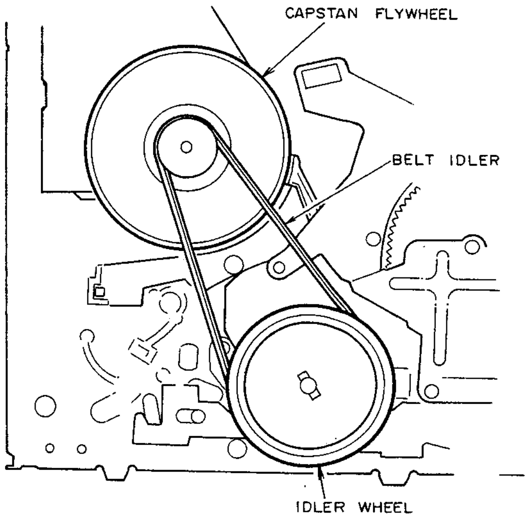

CAPSTAN FLYWHEEL
BELT IDLER
IDLER WHEEL

Fig. 4-15

12) Attach the LOADING DRIVE BLK and tighten with a screw Ⓓ.

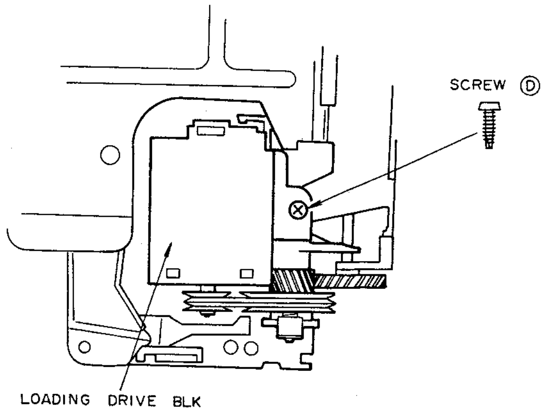

SCREW Ⓓ
LOADING DRIVE BLK

Fig. 4-16

## 4-3. UPPER DRUM (HEAD DRUM REPLACEMENT)

### 4-3-1. REMOVAL OF UPPER DRUM

1) Unsolder the eight relay leads and remove two Upper Drum fixing screws.
2) Gently lift and remove the Upper Drum.

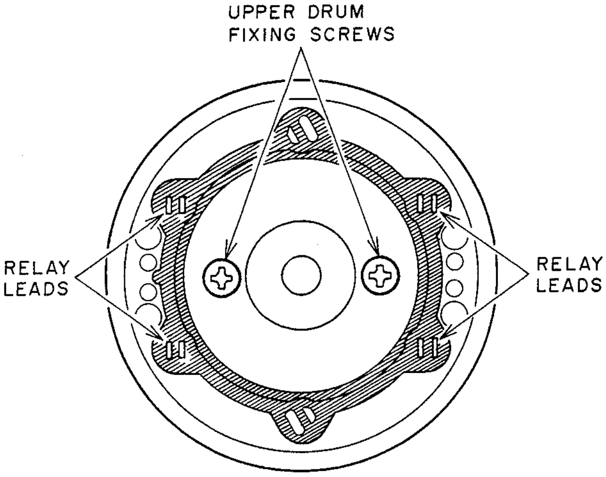


Fig. 4-17

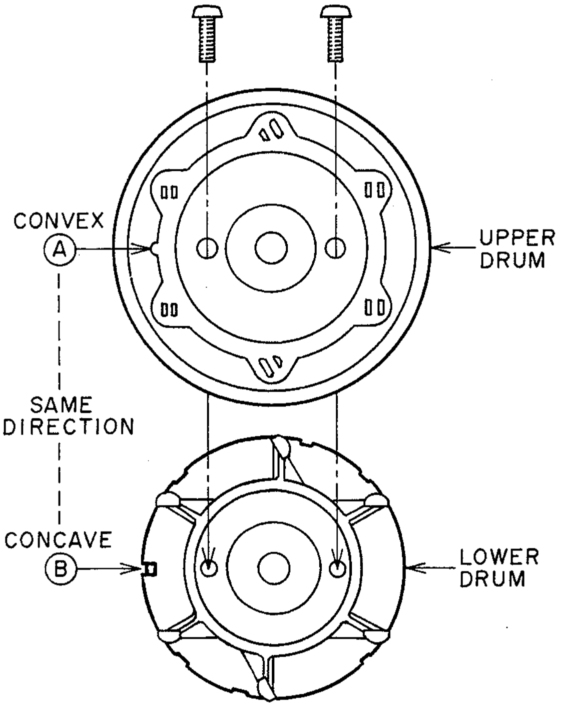


Fig. 4-18

### 4-3-2. INSTALLATION OF UPPER DRUM

1) Install the Upper Drum to the Lower Drum so that Upper Drum convex Ⓐ and Lower Drum concave Ⓑ become same direction.

**NOTE:** Height precisior is required for the proper performance, and the head tips are fragile, so the following points should be noted when replacing the Upper Drum Block.

(a) Do not loosen the set screw on the collar preload.
(b) Before fixing, clean both surfaces where the upper drum and the rotary transformer part meet with alcohol.
(c) When installation of the Upper Drum, if it does not go on to the shaft easily, clean the hole in the Upper Drum with alcohol and put a little oil on the shaft.
(d) Make sure that the Upper Drum fixing screw holes on the Rotary Transformer part and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
(e) Tighten the two Upper drum fixing screws alternately and gradually. Tighten them at 6kg-cm torque.

### 4-3-3. AFTER REPLACEMENT

After replacement, the following adjustments are necessary for the proper performance.

1) Control head phase adjustment. (Tape transport adj. 5-2-4)
2) PB switching point adjustment. (Electrical adj. Step 2)
3) Video Rec current adjustment. (Electrical adj. Step 9)

## 4-4. DRUM MOTOR REPLACEMENT

1) Disconnect the connector P502 from the Drum Motor P.C. Board.
2) Take out two screws Ⓐ and remove the Rotary plate.

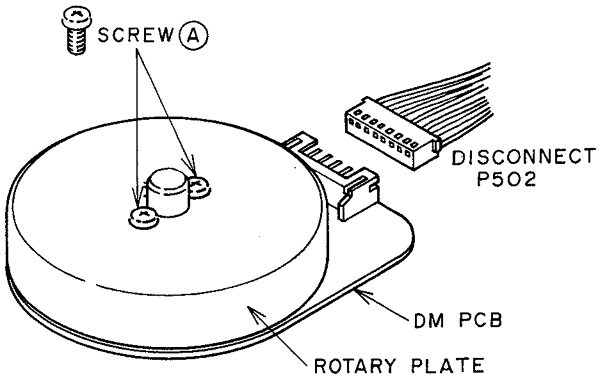


Fig. 4-19

3) Take out three screws Ⓑ and replace the drum Motor.

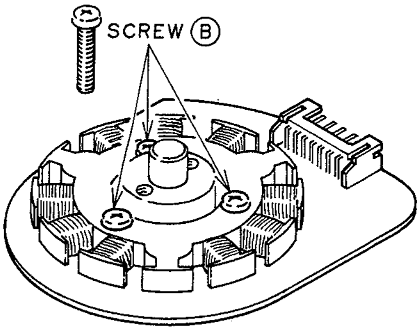


Fig. 4-20

4) Attach the Rotary plate to the Drum Motor so that the Rotary plate hall ⓐ and Collar preload hall ⓑ become a same direction.

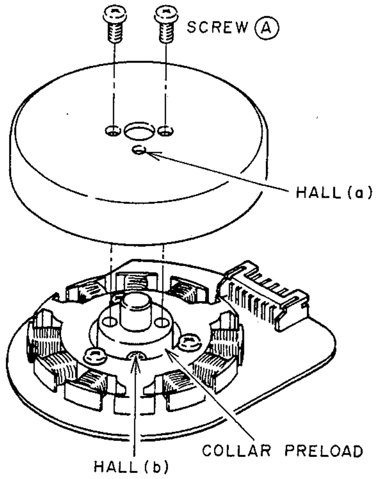

SCREW Ⓐ
HALL (a)
COLLAR PRELOAD
HALL (b)

Fig. 4-21

# V. MECHANICAL ADJUSTMENT

## 5-1. BACK TENSION ADJUSTMENT

1) Remove the Ejector Block. (Refer to 4-1-1. EJECTOR BLOCK REPLACEMENT.)
2) Depress the POWER button to turn ON the VCR. the VCR will get to the tape loaded mode without cassette tape.
3) In the Play mode, loosen the screw Ⓐ and set the Tension Arm position to the correct position as shown in Fig. 5-1 by the Tension Band Holder position, then tighten the screw Ⓐ.

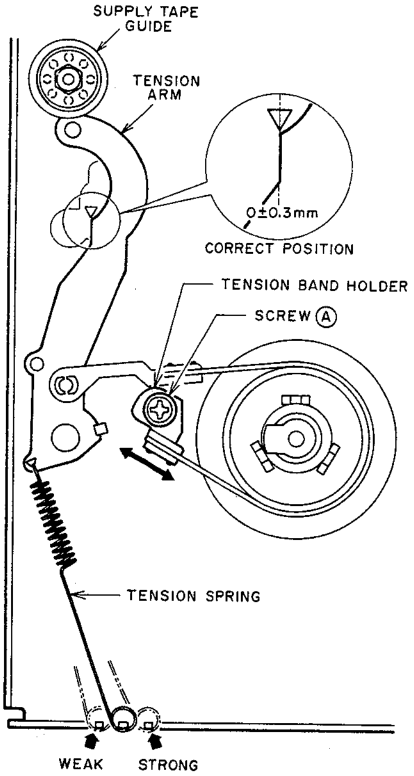

SUPPLY TAPE GUIDE
TENSION ARM
0±0.3mm
CORRECT POSITION
TENSION BAND HOLDER
SCREW Ⓐ
TENSION SPRING
WEAK
STRONG

Fig. 5-1

4) Depress the Power button to Turn OFF.
5) Set the Reference Tape TF-542CBS (AT-751365) and put some weight on the Reference tape as a stabilizer.
6) Depress the POWER button and PLAY button.
7) Observe the TV screen and adjust V-HOLD for TV so that switching point appears on the TV screen as shown in Fig. 5-2.
8) Select the hook position of the Tension spring where the smallest skew should be obtained.

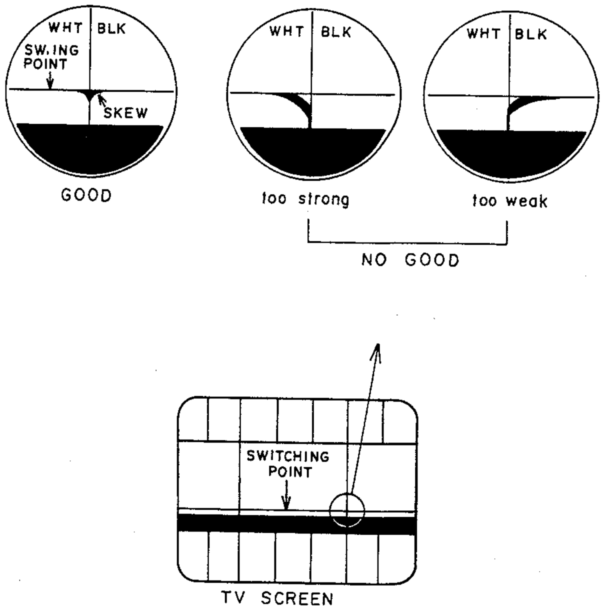

WHT
BLK
SW. ING POINT
SKEW
GOOD
too strong
too weak
NO GOOD
SWITCHING POINT
TV SCREEN

Fig. 5-2

## 5-2. TAPE TRANSPORT ADJUSTMENTS

### 5-2-1. TAPE CURL ADJUSTMENT AT THE TAKE-UP TAPE GUIDE

1) Playback the Reference tape TF-540RFS (AT-751363).
2) Turn the screw ⓐ on the A/C Head Blk until the edge of the tape barely touches the lower part of TAKE-UP TAPE GUIDE without any curl or wrinkle.

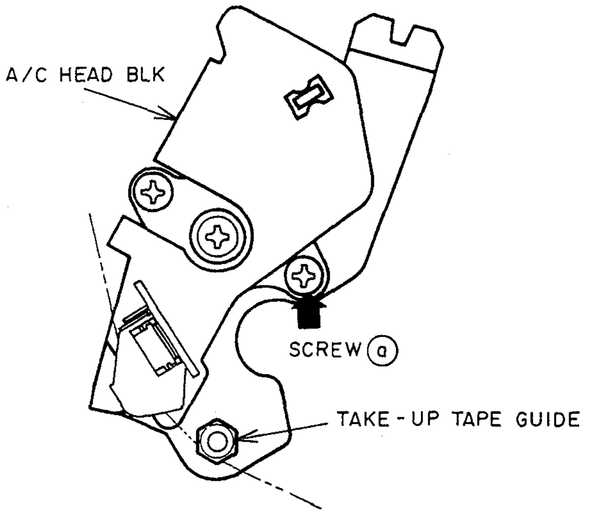

A/C HEAD BLK
SCREW ⓐ
TAKE-UP TAPE GUIDE

Fig. 5-3

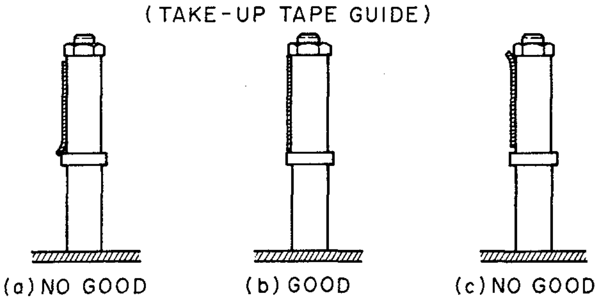

(TAKE-UP TAPE GUIDE)
(a) NO GOOD
(b) GOOD
(c) NO GOOD

Fig. 5-4

### 5-2-2. CONFIRMATION OF TAPE CURL AT THE SUPPLY TAPE GUIDE

Confirm that the edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE without any curl or wrinkle.

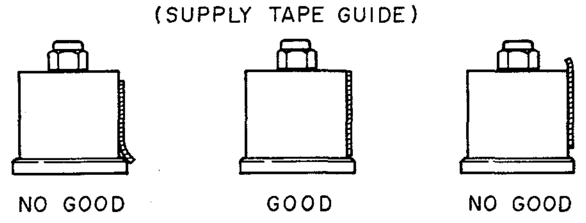

(SUPPLY TAPE GUIDE)
NO GOOD
GOOD
NO GOOD

Fig. 5-5

### 5-2-3. AUDIO HEAD AZIMUTH ADJUSTMENT (SP)

1) Connect an AC volt meter or an oscilloscope to AUDIO OUT jack on the Rear panel.
2) Playback the Reference tape TF-540RFS (AT-751363).
3) Adjust the screw ⓑ to obtain the maximum audio output.

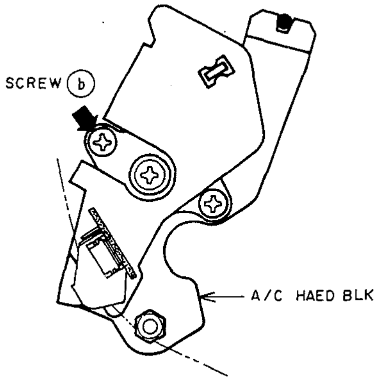

SCREW ⓑ
A/C HAED BLK

Fig. 5-6

### 5-2-4. CONTROL HEAD PHASE ADJUSTMENT

1) Connect an Oscilloscope to TP202 (ENVE) on the MAIN P.C. Board.
2) Playback the Reference tape TF-540RFS (AT-751363).
3) Depress the TRACKING button [<] or [>] on the Front panel until "T" mark can be seen in the center position as shown in Fig. 5-7.
4) Insert a sharpness screwdriver into A/C HEAD base and hall ⓐ as shown in Fig. 5-8.
5) Move the A/C HEAD base by moving a screwdriver in the directions of the arrow as shown in Fig. 5-8 to obtain the maximum RF envelope.

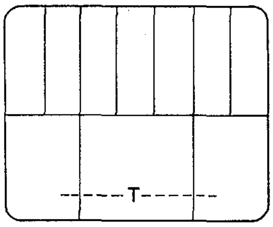


Fig. 5-7 On the TV screen

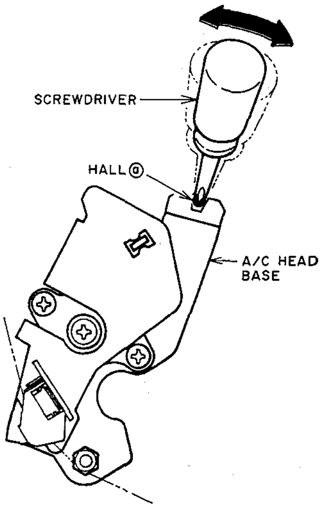

SCREWDRIVER
HALL ⓐ
A/C HEAD BASE

Fig. 5-8

### 5-2-5. ARM REVIEW HEIGHT ADJUSTMENT

1) Playback the beginning part of T-120 tape and set the unit in Review mode with depressing REW button.
2) Turn the ARM REVIEW height nut ⓐ so that the edge of the tape barely touches the lower part of TAKE-UP TAPE GUIDE without any curl or wrinkle between TAKE-UP TAPE GUIDE and CAPSTAN SHAFT.

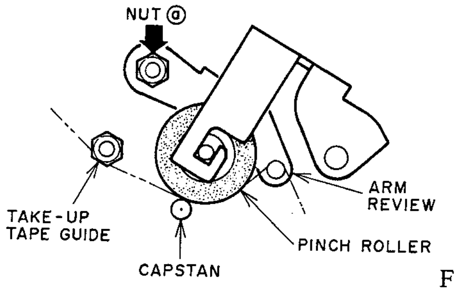

NUT ⓐ
TAKE-UP TAPE GUIDE
CAPSTAN
PINCH ROLLER
ARM REVIEW

Fig. 5-9

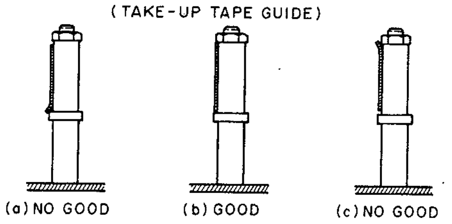

(TAKE-UP TAPE GUIDE)
(a) NO GOOD
(b) GOOD
(c) NO GOOD

Fig. 5-10

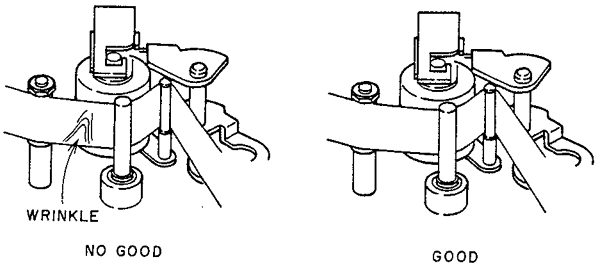

WRINKLE
NO GOOD
GOOD

Fig. 5-11

### 5-2-6. LOADING LEADER HEIGHT ADJUSTMENTS

1) Slightly loosen the set screw at lower part of the LOADING LEADERS (L), (R) so that LOADING LEADERS can be adjusted with reasonable tightness. (Refer to Fig. 5-12.)
2) Playback the Reference tape TF-540RFS (AT-751363).
3) Connect an Oscilloscope to TP202 (ENVE) on the MAIN P.C. Board.
4) Turn the LOADING LEADER Heads with a screwdriver to obtain flat RF envelope as Ideal Envelope shown in Fig. 5-13.
5) After the adjustments, tighten the LOADING LEADER set screws.

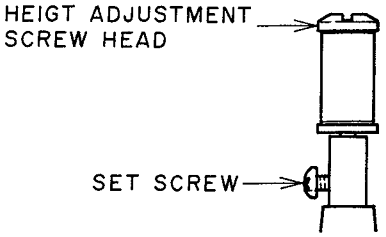

HEIGT ADJUSTMENT SCREW HEAD
SET SCREW

Fig. 5-12

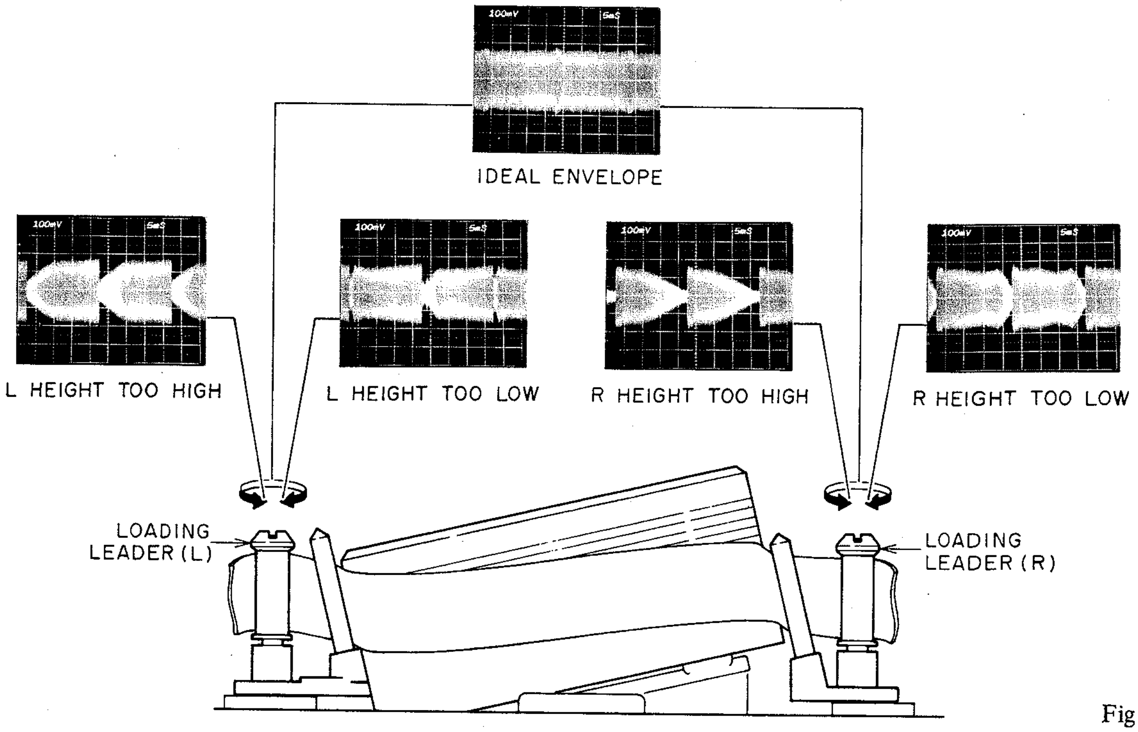

IDEAL ENVELOPE
L HEIGHT TOO HIGH
L HEIGHT TOO LOW
R HEIGHT TOO HIGH
R HEIGHT TOO LOW
LOADING LEADER (L)
LOADING LEADER (R)

Fig. 5-13

## 5-2-7. A/C HEAD HEIGHT ADJUSTMENTS

1) Playback the Test tape TF-526HH (AT-751788).
2) Connect the Oscilloscope CH-1 to Audio output and CH2 to TP500.
3) Turn the hexagon screw to obtain 1/2 of the output level of either CH1 or CH2 whichever has output signal.

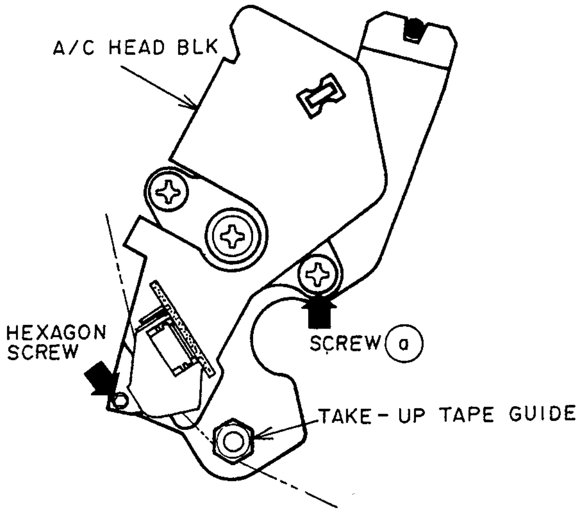
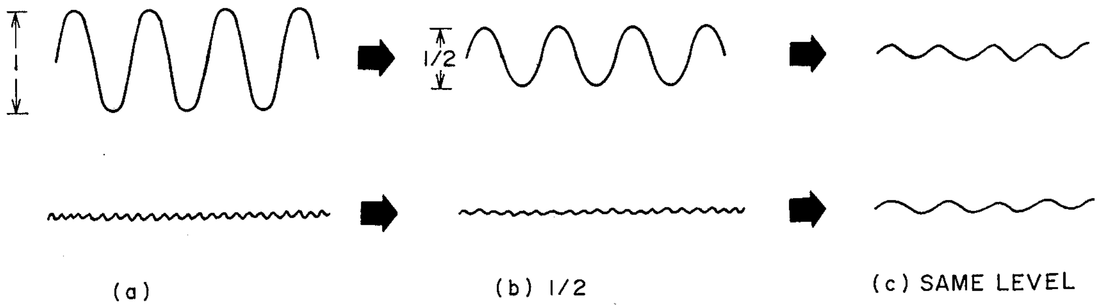


Fig. 5-14



(a) (b) 1/2 (c) SAME LEVEL

Fig. 5-15

4) Slightly turn the screw ⓐ until the tape edge barely tuches the lower part of the Take-up Tape Guide without any curl as shown in Fig. 5-4.
5) Confirm that both signals of CH1 and CH2 are nearly same level. Repeat the adjustments 3), 4). If it is not nearly same level.

## 5-2-8. AUDIO HEAD AZIMUTH ADJUSTMENT (EP)

1) Connect an AC volt meter or an oscilloscope to AUDIO OUT jack on the Rear panel.
2) Playback the Reference tape TF-541RFL (AT-751364).
3) Adjust the screw ⓑ to obtain the maximum audio output.

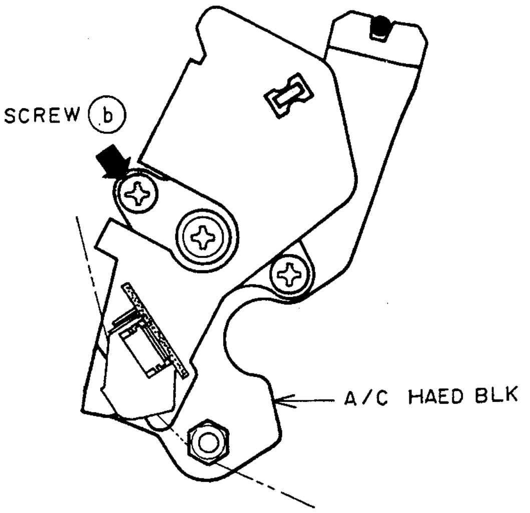
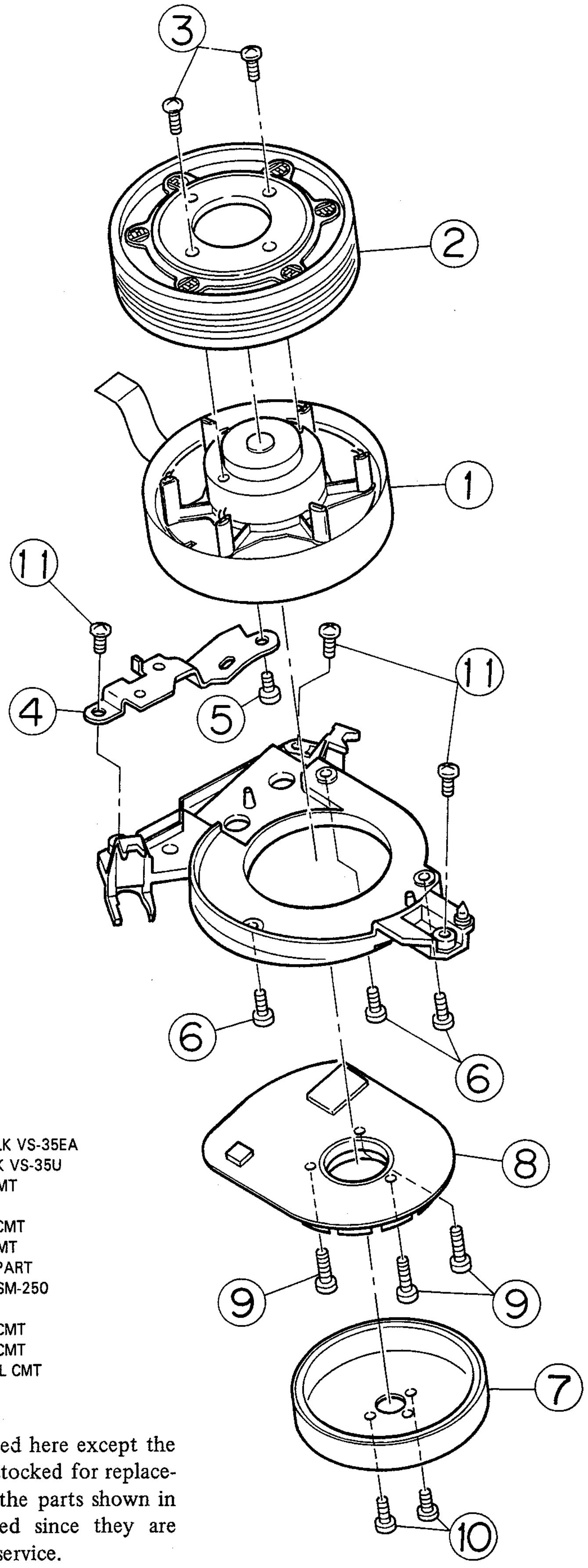


Fig. 5-16

| Ref. No. | Part No. | Description |
|---|---|---|
| 123 | MB-373096 | BELT LOADING |
| 124 | ML-373075 | ARM LOADING BRAKE |
| 125 | ML-367614 | ARM MAIN BRAKE(S)PART |
| 126 | ML-367616 | ARM MAIN BRAKE(TU)PART |
| 127 | ML-367617 | ARM REVIEW BRAKE PART |
| 128 | ML-373043 | CLUTCH BLK |
| 129 | ML-500881 | LEVER TENSION BAND PART |
| 130 | MZ-500717T | GEAR CAM CENTER (TW) |
| 131 | MZ-368797T | GEAR CAM JOINT (TW) |
| 132 | MZ-500707T | GEAR CAM TENSION (TW) |
| 133 | MZ-500715T | GEAR FL DRIVE (TW) |
| 134 | MZ-V1075A090A | GEAR TOGGLE (S) BLK VS-35EA |
| 135 | MZ-V1075A100A | GEAR TOGGLE (TU) BLK VS-35EA |
| 136 | MZ-500716T | GEAR WHEEL (TW) |
| 137 | MZ-367628 | GEAR WORM PART |
| 138 | MZ-368794T | GEAR(S) (TW) |
| 139 | MZ-368795T | GEAR(T) (TW) |
| 140 | TR-373025 | TR 2SD1944 J,K |
| 141 | VT-367622 | GUIDE ROLLER PART |

# HEAD DRUM BLOCK

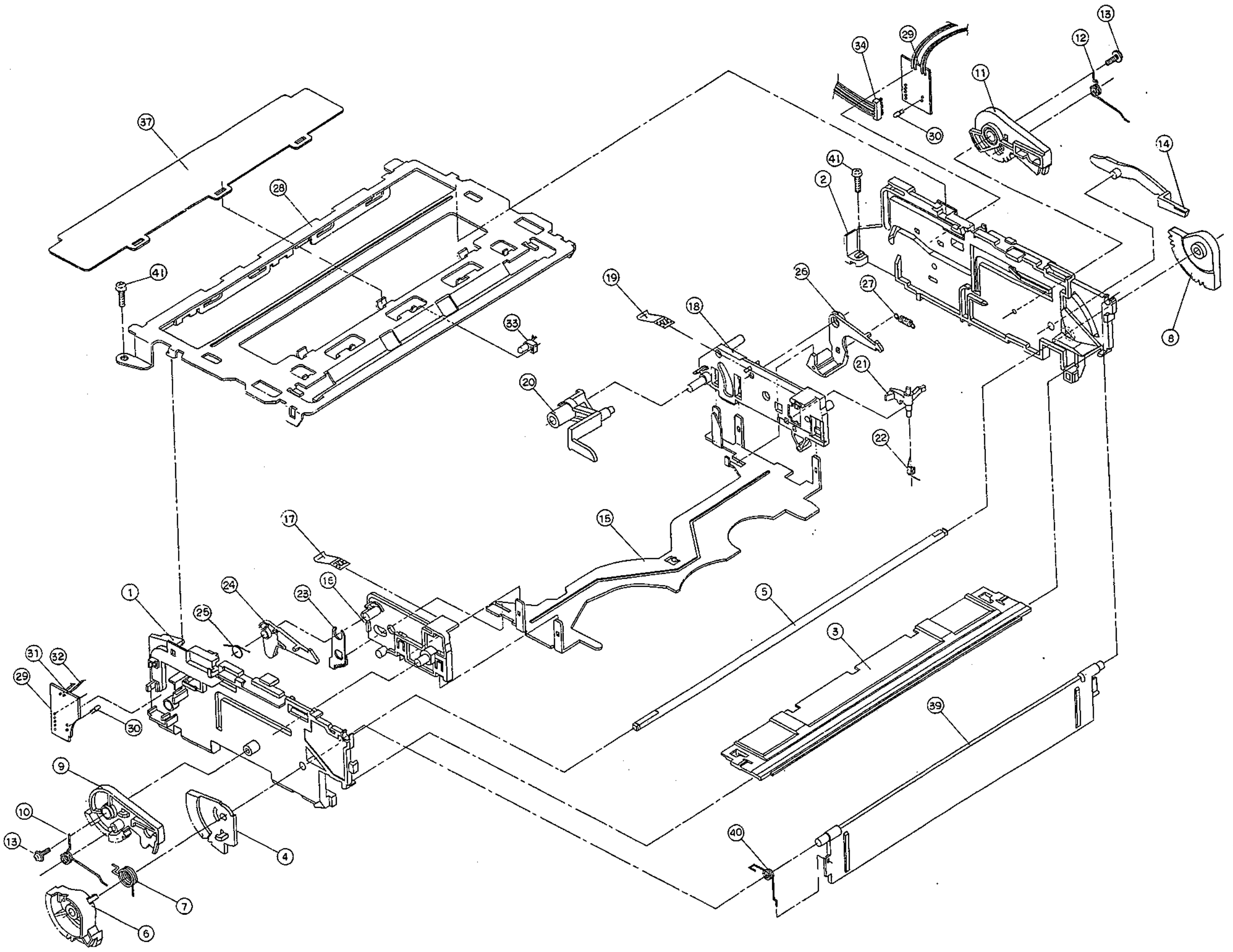


## 2. HEAD DRUM BLOCK

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | BV-V1075A410A | LOWER DRUM BLK VS-35EA |
| 2 | BV-V1075A420A | UPPER DRUM BLK VS-35U |
| 3 | ZS-321298 | BID30X08STL CMT |
| 4 | VT-373884 | PLATE EARTH |
| 5 | ZS-479474 | PAN26X05STL CMT |
| 6 | ZS-563444 | BID26X08STL CMT |
| 7 | BV-B373848 | YOKE MAGNET PART |
| 8 | BM-M3225A020A | PC MOTOR BLK SM-250<br>[DRUM MOTOR] |
| 9 | ZS-467796 | PAN26X12STL CMT |
| 10 | ZS-479474 | PAN26X05STL CMT |
| 11 | ZS-370047 | DT BID30X12STL CMT |

NOTE: The parts reference numbered here except the ones in 500's are normally stocked for replacement purpose. The rest of the parts shown in this manual are not stocked since they are seldom required for routine service.

# EJECTOR BLOCK



## 5. EJECTOR BLOCK

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | MZ-368790T | HOUSING(S) (TW) |
| 2 | MZ-368791T | HOUSING(T) (TW) |
| 3 | SZ-375956T | GUID F (TW) |
| 4 | MZ-368794T | GEAR(S) (TW) |
| 5 | MS-368798T | SHAFT LOADING (TW) |
| 6 | MZ-368797T | GEAR CAM JOINT (TW) |
| 7 | ZG-375953T | SP TORSION JOINT (TW) |
| 8 | MZ-368795T | GEAR(T) (TW) |
| 9 | ML-368792T | ARM LOADING(S) (TW) |
| 10 | ZG-375954T | SP TORSION LOADING(S) (TW) |
| 11 | ML-368793T | ARM LOADING(T) (TW) |
| 12 | ZG-375955T | SP TORSION LOADING(T) (TW) |
| 13 | ZS-368524 | PLX BID26X10STL CMT C072 |
| 14 | ML-500730T | ARM LID OPENER (TW) |
| 17 | ZG-500735T | SP GUIDE CASSETTE (TW) |
| 19 | ZG-500735T | SP GUIDE CASSETTE (TW) |
| 22 | ZG-375959T | SP TORSION RELEASE (TW) |
| 25 | ZG-375957T | SP TORSION DAMPER (TW) |
| 27 | ZG-375958T | SP PULL DAMPER (TW) |
| 28 | MA-368799T | CHASSIS UPPER (TW) |
| 30 | ET-361490 | TR PHOTO PN268 R,S |
| 33 | EL-373102T | PL CORD LCX (TW)<br>[PL1] |
| 37A | SE-368476T | PLATE MIRROR U (TW)<br>[U[A],U[C]] |
| 37B | SE-374026 | PLATE MIRROR<br>[UM[U]] |
| 39A | SE-500932T | MASK CASSETTE ENGLISH (TW)<br>[VS-33U/UM] |
| 39B | SE-500934T | MASK CASSETTE ENGLISH V (TW)<br>[VS-35U] |
| 40 | ZG-500767 | SP TORSION MASK |
| 41 | ZS-378341 | PLX BID30X12STL CMT |
| 42 | BV-V1075A240A | TW HOLDER CASSETE BLK -35EA/TW<br>[INCL. 15 TO 27] |
| 43 | BV-V1075A205A | TW EJECTOR (2) BLK VS-35EA/TW<br>[INCL. 1 TO 34] |

NOTE: The parts reference numbered here except the ones in 500's are normally stocked for replacement purpose. The rest of the parts shown in this manual are not stocked since they are seldom required for routine service.

## 6. P.C BOARD BLOCK

| Ref. No. | Part No. | Description |
|---|---|---|
| 1A | BA-V1077A600A | PC(#) MAIN(NTSC) BLK VS-33U<br>[VS-33U/UM] |
| 1B | BA-V1077A600B | PC(#) MAIN(NTSC) BLK VS-35U<br>[VS-35U] |

PC (#) MAIN BLK CONSISTS OF FOLLOWING P.C BOARD.

- MAIN P.C BOARD
- CHROMA P.C BOARD
- AUDIO & PRE-AMP P.C BOARD
- OPERATION P.C BOARD

PC (#) POWER BLK CONSISTS OF FOLLOWING P.C BOARD.

- POWER SUPPLY P.C BOARD
- TR P.C BOARD
- DIODE P.C BOARD
- SW POWER P.C BOARD

## 7. MAIN P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| C500 | EC-368823 | C DBL LAYER EECS5R5H 473Z5.5DC |
| D1 | ED-307572 | D SILICON H 1SS131 |
| D2 | ED-307572 | D SILICON H 1SS131 |
| D3 | ED-307572 | D SILICON H 1SS131 |
| D4 | ED-307572 | D SILICON H 1SS131 |
| D200 | ED-307572 | D SILICON H 1SS131 |
| D201 | ED-624903 | D SILICON H 1S2473 |
| D202 | ED-307572 | D SILICON H 1SS131 |
| D203 | ED-307572 | D SILICON H 1SS131 |
| D204 | ED-307572 | D SILICON H 1SS131 |
| D500 | ED-307572 | D SILICON H 1SS131 |
| D501 | ED-307572 | D SILICON H 1SS131 |
| D502 | ED-307572 | D SILICON H 1SS131 |
| D503 | ED-307572 | D SILICON H 1SS131 |
| D504 | ED-307572 | D SILICON H 1SS131 |
| D506 | ED-307572 | D SILICON H 1SS131 |
| D507 | ED-307572 | D SILICON H 1SS131 |
| D508 | ED-307572 | D SILICON H 1SS131 |
| D509 | ED-307572 | D SILICON H 1SS131 |
| D510 | ED-307572 | D SILICON H 1SS131 |
| D511 | ED-307572 | D SILICON H 1SS131 |
| D512 | ED-307572 | D SILICON H 1SS131 |
| D514 | ED-307572 | D SILICON H 1SS131 |
| D516 | ED-346541 | D ZENER H HZ9L B2 |
| D519 | ED-307572 | D SILICON H 1SS131 |
| D521 | ED-307572 | D SILICON H 1SS131 |
| D528 | ED-624903 | D SILICON H 1S2473 |
| D529 | ED-365699 | D ZENER H HZS5.6J B1 F05 |
| D530 | ED-307572 | D SILICON H 1SS131 |
| FL1 | EH-370811 | FILTER CE SAF45MB70Z |
| FL2 | EH-363276 | FILTER CE TPS4.5MB2 |
| FL3 | EH-370812 | FILTER CE SFE4.5MB |
| FL4 | EH-373922 | FILTER CE CDA4.5ME6A |
| FL200 | EH-373145 | FILTER LC LP LF-71N-02 5P |
| FL202 | EH-368896 | FILTER LC MYV-24L |
| FR500 | *ER-378414 | R OMF H S12 FS 1W R47J |
| IB500 | EH-366605 | COMP R RKC5BS103J |
| IB501 | EH-374012 | COMP R RKC6BS 103J |
| IC1 | EI-368809 | IC M51496P |
| IC3 | EI-337530 | IC UPC574J |
| IC200 | EI-373964 | IC AN3230 |
| IC201 | EI-200573 | IC TC4053BP |
| IC202 | EI-373965 | IC MSM6964 |
| IC500 | EI-360316 | IC BA6305 |
| IC501 | EI-373980 | IC BA15218N |
| IC502 | EI-354095 | IC BA718 |
| IC503 | EI-373978 | IC BU2734 NTSC CUSTOM |
| IC504 | EI-353421 | IC BA6229 |
| IC505 | EI-373981 | IC BA6993N |
| IC506 | EI-368182 | IC MB88525-186G LCXSYN1 CUSTOM |
| IC507 | EI-373980 | IC BA15218N |
| L1 | EO-368178 | COIL FIX 1 EL0606SKI R47M |
| L2 | EO-376856 | COIL FIX 1 LF-5.0S F05 1R0M |
| L3 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L4 | EO-368893 | COIL VARI 1 134-5060-04 |
| L5 | EO-368894 | COIL TUN 1 LLD 134-5056-04 |
| L6 | EO-345876 | COIL FIX 1 EL0606SKI 470J |
| L8 | EO-345872 | COIL FIX 1 EL0606SKI 220J |
| L9 | EO-368895 | COIL TUN 2 AFT 111-5042-14 |
| L10 | EO-376614 | COIL FIX 1 LF-5.0S F05 220K |
| L11 | EO-345865 | COIL FIX 1 EL0606SKI 100J |
| L200 | EO-376607 | COIL FIX 1 LF-5.0S F05 181K |
| L201 | EO-376602 | COIL FIX 1 LF-5.0S F05 121K |
| L202 | EO-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L203 | EO-376609 | COIL FIX 1 LF-5.0S F05 270K |
| L204 | EO-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L205 | EO-345866 | COIL FIX 1 EL0606SKI 120J |
| L206 | EO-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L207 | EO-345885 | COIL FIX 1 EL0606SKI 181J |
| L208 | EO-376612 | COIL FIX 1 LF-5.0S F05 680K |
| L209 | EO-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L210 | EO-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L211 | EO-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L212 | EO-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L213 | EO-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L500 | EO-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| P200 | EJ-373971 | PIN J JPJ0881-010 BLACK 2P<br>[AUDIO] |
| P201 | EJ-373970 | PIN J JPJ0811-040 YELLOW 2P<br>[VIDEO] |
| TR1 | ET-375777 | TR 2SC2926S P,Q |
| TR2 | ET-360067 | TR 2SC3330 T,U F05 |
| TR3 | ET-360067 | TR 2SC3330 T,U F05 |
| TR4 | ET-360067 | TR 2SC3330 T,U F05 |
| TR5 | ET-375777 | TR 2SC2926S P,Q |
| TR6 | ET-360067 | TR 2SC3330 T,U F05 |
| TR7 | ET-360067 | TR 2SC3330 T,U F05 |
| TR8 | ET-354414 | TR DTC144ES |
| TR9 | ET-353899 | TR 2SA1317 S,T,U |
| TR10 | ET-321644 | TR 2SC1213 C |
| TR11 | ET-353899 | TR 2SA1317 S,T,U |
| TR13 | ET-356224 | TR 2SA1286 G,H,J F05 |
| TR16 | ET-353899 | TR 2SA1317 S,T,U |
| TR17 | ET-353899 | TR 2SA1317 S,T,U |
| TR18 | ET-353899 | TR 2SA1317 S,T,U |
| TR19 | ET-356224 | TR 2SA1286 G,H,J F05 |
| TR200 | ET-353899 | TR 2SA1317 S,T,U |
| TR201 | ET-360067 | TR 2SC3330 T,U F05 |
| TR202 | ET-354414 | TR DTC144ES |
| TR205 | ET-363953 | TR DTA114TS |
| TR206 | ET-360067 | TR 2SC3330 T,U F05 |
| TR207 | ET-353897 | TR DTC114ES |
| TR208 | ET-360067 | TR 2SC3330 T,U F05 |
| TR209 | ET-354414 | TR DTC144ES |
| TR210 | ET-356224 | TR 2SA1286 G,H,J F05 |
| TR211 | ET-360067 | TR 2SC3330 T,U F05 |
| TR212 | ET-353899 | TR 2SA1317 S,T,U |
| TR213 | ET-360067 | TR 2SC3330 T,U F05 |
| TR214 | ET-354414 | TR DTC144ES |
| TR215 | ET-353899 | TR 2SA1317 S,T,U |
| TR500 | ET-354415 | TR DTA144ES |
| TR501 | ET-360067 | TR 2SC3330 T,U F05 |
| TR502 | ET-373985 | TR DTA144TS |
| TR503 | ET-354414 | TR DTC144ES |
| TR504 | ET-354414 | TR DTC144ES |
| TR505 | ET-354414 | TR DTC144ES |

| Ref. No. | Part No. | Description |
|---|---|---|
| TR507 | ET-373985 | TR DTA144TS |
| TR508 | ET-354371 | TR DTC124ES |
| TR511 | ET-356224 | TR 2SA1286 G,H,J F05 |
| TR512 | ET-373985 | TR DTA144TS |
| TR513 | ET-360067 | TR 2SC3330 T,U F05 |
| TR514 | ET-373985 | TR DTA144TS |
| TR515 | ET-353899 | TR 2SA1317 S,T,U |
| TR516 | ET-353899 | TR 2SA1317 S,T,U |
| TR517 | ET-354365 | TR DTC114YS |
| TR518 | ET-354371 | TR DTC124ES |
| TR520 | ET-354414 | TR DTC144ES |
| TR521 | ET-353899 | TR 2SA1317 S,T,U |
| TR522 | ET-375983 | TR DTA124TS |
| VR1 | EV-368135 | R S-FIX H KVSF637A 0.01W 474 |
| VR2 | EV-356324 | R S-FIX H KVSF637A 0.10W 103 |
| VR3 | EV-356324 | R S-FIX H KVSF637A 0.10W 103 |
| VR200 | EV-358829 | R S-FIX H RH0615C 0.10W 223 |
| VR201 | EV-358829 | R S-FIX H RH0615C 0.10W 223 |
| VR202 | EV-356324 | R S-FIX H KVSF637A 0.10W 103 |
| VR203 | EV-356324 | R S-FIX H KVSF637A 0.10W 103 |
| VR204 | EV-358829 | R S-FIX H RH0615C 0.10W 223 |
| VR205 | EV-358829 | R S-FIX H RH0615C 0.10W 223 |
| VR206 | EV-356579 | R S-FIX H RH0615C 0.10W 102 |
| VR207 | EV-356583 | R S-FIX H RH0615C 0.10W 332 |
| VR208 | EV-356583 | R S-FIX H RH0615C 0.10W 332 |
| VR209 | EV-374014 | R S-FIX EVTK-8C 0.20W 104 |
| VR210 | EV-374014 | R S-FIX EVTK-8C 0.20W 104 |
| VR501 | EV-378325 | R S-FIX H KVSF687A 0.30W 473 |
| X500 | EI-347991 | OSC CE CSA6.00MS 6MHZ |
| 1 | EE-373926 | TV TUNER TEMH1-023A US |
| 2 | BV-373934 | RF CONVERTER YAA21-0279 US |
| 3 | SP-500680T | PANEL REAR JACK U (TW) |
| 4 | ZS-362378 | PLX BID30X10STL CMT |

## 8. CHROMA P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D400 | ED-307572 | D SILICON H 1SS131 |
| D401 | ED-307572 | D SILICON H 1SS131 |
| DL400 | EH-370413 | DL ADL-FN2135Q-B03 |
| FL400 | EH-370615 | FILTER LC FF-71N |
| IC400 | EI-373023 | IC TA8632N |
| IC401 | EI-367904 | IC M50455-057SP CUSTOM |
| L401 | E0-376610 | COIL FIX 1 LF-5.0S F05 330K |
| L402 | E0-376599 | COIL FIX 1 LF-5.0S F05 100K |
| L403 | E0-376606 | COIL FIX 1 LF-5.0S F05 180K |
| L404 | E0-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L405 | E0-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L406 | E0-376600 | COIL FIX 1 LF-5.0S F05 101K |
| L408 | E0-345887 | COIL FIX 1 EL0606SKI 221J |
| L409 | E0-345889 | COIL FIX 1 EL0606SKI 331J |
| L410 | E0-376600 | COIL FIX 1 LF-5.0S F05 101K |
| L411 | E0-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L412 | E0-376610 | COIL FIX 1 LF-5.0S F05 330K |
| TR400 | ET-360067 | TR 2SC3330 T,U F05 |
| TR401 | ET-360067 | TR 2SC3330 T,U F05 |
| TR402 | ET-353899 | TR 2SA1317 S,T,U |
| TR403 | ET-360067 | TR 2SC3330 T,U F05 |
| TR404 | ET-368084 | TR 2SC3315 D |
| TR405 | ET-360067 | TR 2SC3330 T,U F05 |
| TR406 | ET-360067 | TR 2SC3330 T,U F05 |
| TR407 | ET-360067 | TR 2SC3330 T,U F05 |
| TR409 | ET-353899 | TR 2SA1317 S,T,U |
| TR410 | ET-360067 | TR 2SC3330 T,U F05 |
| VR400 | EV-368340 | R S-FIX H KVSF687A 0.30W 104 |
| X400 | EI-318384 | OSC X'TAL NR-18 3.579545MHZ |

## 9. AUDIO & PRE-AMP P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D700 | ED-307572 | D SILICON H 1SS131 |
| D701 | ED-307572 | D SILICON H 1SS131 |
| D800 | ED-307572 | D SILICON H 1SS131 |
| FL700 | E0-375471 | COIL OSC 1 S033344 |
| IC700 | EI-373946 | IC LA7292 |
| IC800 | EI-367909 | IC HA118019NT |
| L700 | E0-370639 | COIL FIX 1 L-8 272J |
| L701 | E0-370638 | COIL FIX 1 L-8 123J |
| L800 | E0-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L801 | E0-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L802 | E0-376179 | COIL FIX 1 ALF-7.5F F05 101K |
| L803 | E0-376600 | COIL FIX 1 LF-5.0S F05 101K |
| L804 | E0-376611 | COIL FIX 1 LF-5.0S F05 470K |
| L805 | E0-376599 | COIL FIX 1 LF-5.0S F05 100K |
| L806 | E0-376861 | COIL FIX 1 LF-5.0S F05 390K |
| L807 | E0-345889 | COIL FIX 1 EL0606SKI 331J |
| TR700 | ET-360067 | TR 2SC3330 T,U F05 |
| TR800 | ET-354414 | TR DTC144ES |
| TR801 | ET-353899 | TR 2SA1317 S,T,U |
| TR802 | ET-360067 | TR 2SC3330 T,U F05 |
| TR804 | ET-360067 | TR 2SC3330 T,U F05 |
| TR805 | ET-353899 | TR 2SA1317 S,T,U |
| VR700 | EV-356577 | R S-FIX H RH0615C 0.10W 103 |
| VR701 | EV-356582 | R S-FIX H RH0615C 0.10W 473 |

## 10. OPERATION P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D900 | ED-307572 | D SILICON H 1SS131 |
| D901 | ED-307572 | D SILICON H 1SS131 |
| D902 | ED-307572 | D SILICON H 1SS131 |
| D903 | ED-307572 | D SILICON H 1SS131 |
| D904 | ED-307572 | D SILICON H 1SS131 |
| D905 | ED-307572 | D SILICON H 1SS131 |
| D906 | ED-307572 | D SILICON H 1SS131 |
| D907 | ED-307572 | D SILICON H 1SS131 |
| D908 | ED-307572 | D SILICON H 1SS131<br>[VS-33U/UM] |
| D911 | ED-307572 | D SILICON H 1SS131 |
| D912 | ED-307572 | D SILICON H 1SS131 |
| D913 | ED-307572 | D SILICON H 1SS131 |
| D914 | ED-307572 | D SILICON H 1SS131 |
| D915 | ED-307572 | D SILICON H 1SS131 |
| D916 | ED-346543 | D ZENER H HZ9L C1 |
| D917 | ED-356424 | D LED BG5525S GREEN |
| D918 | ED-356424 | D LED BG5525S GREEN |
| D919 | ED-351419 | D ZENER H HZ7L B3 |
| D920 | ED-360409 | D PHOTO PN323B |
| D921 | ED-307572 | D SILICON H 1SS131 |
| FL900 | EM-373956 | IND FL FLV132 |
| IB900 | EH-368109 | COMP R RKC3BS 473J |
| IB901 | EH-374010 | COMP R RKC5BS 473J |
| IC901 | EI-373952 | IC UPD75208CW-121 LCX0PU2 CUSTOM |
| IC902 | EI-373955 | IC S8053ALR |
| IC903 | EI-373954 | IC CXK1006L |
| IC904 | EI-367271 | IC UPC1490HA |
| L900 | EO-376600 | COIL FIX 1 LF-5.0S F05 101K |
| L901 | EO-376616 | COIL FIX 1 LF-5.0S F05 221K |
| L902 | EO-376600 | COIL FIX 1 LF-5.0S F05 101K |
| SW900 | ES-349474 | SW TACT SKHHAM004A |
| SW901 | ES-349474 | SW TACT SKHHAM004A |
| SW902 | ES-349474 | SW TACT SKHHAM004A |
| SW903 | ES-349474 | SW TACT SKHHAM004A |
| SW904 | ES-349474 | SW TACT SKHHAM004A |
| SW905 | ES-349474 | SW TACT SKHHAM004A |
| SW906 | ES-349474 | SW TACT SKHHAM004A |
| SW907 | ES-349474 | SW TACT SKHHAM004A |
| SW908 | ES-349474 | SW TACT SKHHAM004A |
| SW909 | ES-349474 | SW TACT SKHHAM004A |
| SW910 | ES-349474 | SW TACT SKHHAM004A |
| SW911 | ES-349474 | SW TACT SKHHAM004A |
| SW912 | ES-349474 | SW TACT SKHHAM004A |
| SW913 | ES-349474 | SW TACT SKHHAM004A |
| SW914 | ES-349474 | SW TACT SKHHAM004A |
| SW915 | ES-349474 | SW TACT SKHHAM004A |
| SW916 | ES-349474 | SW TACT SKHHAM004A |
| SW917 | ES-375736 | SW SLIDE ESD1112251 2-02-02N<br>[SPEED] |
| SW918 | ES-375736 | SW SLIDE ESD1112251 2-02-02N<br>[INPUT SELECTOR] |
| SW919 | ES-375736 | SW SLIDE ESD1112251 2-02-02N<br>[EDIT] |
| TR900 | ET-354414 | TR DTC144ES |
| TR901 | ET-354414 | TR DTC144ES |
| TR902 | ET-354414 | TR DTC144ES |
| TR903 | ET-354414 | TR DTC144ES |
| TR904 | ET-368836 | TR DTA143TA |
| TR906 | ET-354414 | TR DTC144ES |
| TR907 | ET-354364 | TR DTC143TS |
| TR908 | ET-354364 | TR DTC143TS |
| TR909 | ET-354364 | TR DTC143TS |
| VR900 | EV-373958 | VR ROTARY RK09K1130 B203<br>[PICTURE] |
| X900 | EI-373957 | OSC CE CST4.19MG 4.194 MHZ |
| X901 | EI-368825 | OSC X'TAL MX-38T 32.768KHZ |

## 11. PRE-SET P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D950 | ED-368826 | D LED BG3402S GREEN |
| D951 | ED-307572 | D SILICON H 1SS131 |
| D952 | ED-307572 | D SILICON H 1SS131 |
| D953 | ED-307572 | D SILICON H 1SS131 |
| D954 | ED-307572 | D SILICON H 1SS131 |
| D955 | ED-307572 | D SILICON H 1SS131 |
| SW951 | ES-349474 | SW TACT SKHHAM004A |
| SW952 | ES-349474 | SW TACT SKHHAM004A |
| SW953 | ES-349474 | SW TACT SKHHAM004A |
| SW954 | ES-349474 | SW TACT SKHHAM004A |
| SW955 | ES-349474 | SW TACT SKHHAM004A |
| SW956 | ES-349474 | SW TACT SKHHAM004A |
| SW957 | ES-375737 | SW SLIDE ESD1111351 2-01-03N<br>[PRE-SET] |

## 12. POWER SUPPLY P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| C1 | *EC-361942 | C CE V DNS103ZV V 103Z 400AC |
| D3 | *ED-367202 | D SILICON S5566B F12<br>[UM[U]] |
| D4 | *ED-367202 | D SILICON S5566B F12<br>[UM[U]] |
| D5 | ED-307572 | D SILICON H 1SS131 |
| D7 | *ED-367693 | D SILICON S5566G(LC-7)F12 |
| D8 | *ED-367693 | D SILICON S5566G(LC-7)F12 |
| D9 | ED-307572 | D SILICON H 1SS131 |
| D10 | ED-307572 | D SILICON H 1SS131 |
| D11 | ED-376598 | D ZENER H HZS36J B3 F05 |
| D12 | ED-346525 | D ZENER H HZ6L A3 |
| D13 | *ED-379041 | D SILICON S5566B 100/1.0A |
| FR1 | *ER-318400 | R CB H S10 FS RDS 1/4W 680J |
| IC1 | *EI-367571 | IC LA6358T |
| R1 | *ER-356573 | R SD ANTI-STATIC 1/2W 225K<br>[U[A],U[C]] |
| TR1 | *ET-353899 | TR 2SA1317 S,T,U |
| TR2 | *ET-355669 | TR 2SC3246 G,H,J F05 |
| TR3 | TR-373025 | TR 2SD1944 J,K |
| TR4 | TR-373025 | TR 2SD1944 J,K |
| TR5 | *ET-360067 | TR 2SC3330 T,U F05 |
| TR6 | *ET-360067 | TR 2SC3330 T,U F05 |
| TR7 | *ET-360067 | TR 2SC3330 T,U F05 |
| TR9 | *ET-376818 | TR 2SC3247 H,J,K |
| TR10 | *ET-366677 | TR 2SD1761 E,F |
| TR11 | *ET-364093 | TR 2SA1283 E,F F05 |
| T1A | *BT-373993 | TRANS POW V1077U<br>[U[A],U[C]] |
| T1B | *BT-373994 | TRANS POW V1077UM<br>[UM[U]] |
| VR1 | EV-376139 | R S-FIX H KVSF687A 0.30W 472 |
| F1A | *EF-309391 | FUSE TSC 125V 800MA<br>[U[A],U[C]] |
| F1B | *EF-258344 | FUSE SEMKO T 250V 800MA<br>[UM[U]] |
| F2A | *EF-306956 | FUSE TSC 125V 2.50A<br>[U[A],U[C]] |
| F2B | *EF-601301 | FUSE SEMKO T 250V 2.00A<br>[UM[U]] |

## 13. TR P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| TR8 | *ET-366677 | TR 2SD1761 E,F |

## 14. DIODE P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D1 | *ED-379298 | D SILICON BA20B |

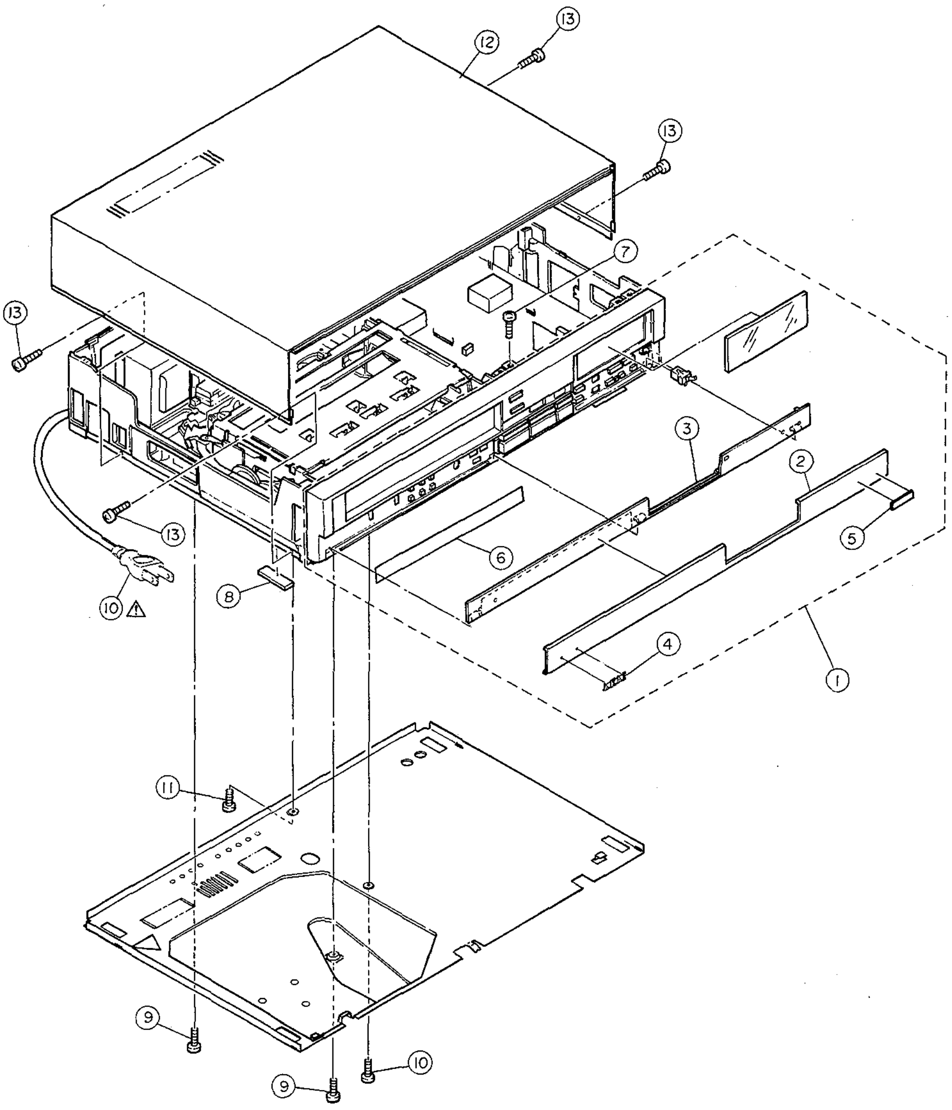
## 15. SW POWER P.C BOARD (VS-33UM ONLY)

| Ref. No. | Part No. | Description |
|---|---|---|
| C25 | EC-378327 | C EC V SM 2R2M 450DC<br>[UM[U]] |
| D15 | ED-371512 | D SILICON ERA22-04Y F05<br>[UM[U]] |
| D16 | ED-371512 | D SILICON ERA22-04Y F05<br>[UM[U]] |
| D20 | ED-371512 | D SILICON ERA22-04Y F05<br>[UM[U]] |
| D21 | ED-376838 | D SILICON DSA12G UB1 600/1.2A<br>[UM[U]] |
| IC2 | *EI-376794 | IC BA6993<br>[UM[U]] |
| IC3 | EI-368152 | IC BA707<br>[UM[U]] |
| RL1 | *EQ-376837 | RELAY POW VB-100TBU-5 2TR 100V<br>[UM[U]] |
| R26 | *ER-378385 | R CB H S12 FS RDS 1/2W 474J<br>[UM[U]] |
| TR13 | ET-376663 | TR 2SC3868<br>[UM[U]] |
| TR14 | ET-376663 | TR 2SC3868<br>[UM[U]] |

## 16. SUB P.C BOARD

| Ref. No. | Part No. | Description |
|---|---|---|
| D524 | ED-307572 | D SILICON H 1SS131 |
| D525 | ED-307572 | D SILICON H 1SS131 |
| D526 | ED-307572 | D SILICON H 1SS131 |
| D527 | ED-307572 | D SILICON H 1SS131 |
| IC509 | EI-337625 | IC BA236 |
| TR524 | ET-370310 | TR DTC144TS |
| TR525 | ET-375986 | TR DTC124TS |
| TR526 | ET-373985 | TR DTA144TS |
| TR527 | ET-354415 | TR DTA144ES |

# FINAL ASSEMBLY BLOCK



## 17. FINAL ASSEMBLY BLOCK

| Ref. No. | Part No. | Description |
|---|---|---|
| 1A | BD-V1077B300A | PANEL FRONT BLK VS-35U-B<br>[INCL. 2 TO 6] |
| 1B | BD-V1077B300B | PANEL FRONT BLK VS-33U-B<br>[INCL. 2 TO 6] |
| 1C | BD-V1077B300C | PANEL FRONT BLK VS-33UM-B<br>[INCL. 2 TO 6] |
| 2 | SP-500867T | DOOR FRONT(1)ENGLISH B (TW) |
| 3 | SP-500870T | DOOR FRONT(2) B (TW) |
| 4 | SM-500675T | NAME PLATE AKAI(3) (TW) |
| 5 | SM-500676T | NAME PLATE DX4 (TW) |
| 6 | ZZ-368635 | LABEL PRESET ENGLISH |
| 7 | ZS-362378 | PLX BID30X10STL CMT |
| 8 | SA-353927B | FOOT(2) |
| 9 | ZS-364545 | DT BID30X08STL CMT |
| 10 | ZS-362378 | PLX BID30X10STL CMT |
| 11 | ZS-368547 | PLX BID30X06STL CMT |
| 12 | SP-500772 | COVER UPPER B |
| 13 | ZS-374023 | DT BID26X08STL BNI |
| 14A | *EW-371934 | AC CORD 20 KP8WSPT2H B100 A UC<br>[U[A],U[C]] |
| 14B | *EW-364369 | AC CORD 2CORES VM-0129 HVFF-CB<br>[UM[U]] |

## 18. ACCESSORY

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | EW-356449 | CORD UL 1.5M |
| 2A | AX-N4001B010A | LCX REMOCON BLK RC-V33A-EB<br>[VS-33U/UM] |
| 2B | AX-N4001B010B | LCX REMOCON BLK RC-V35A-EB<br>[VS-35U] |

## 19. REMOTE CONTROL UNIT RC-V33A/V35A

| Ref. No. | Part No. | Description |
|---|---|---|
| D1 | ED-376111 | D LED SE303AC INFRARED |
| D2 | ED-344280 | D SILICON H GMA-01-FY2 F05 |
| D3 | ED-344280 | D SILICON H GMA-01-FY2 F05 |
| D4 | ED-344280 | D SILICON H GMA-01-FY2 F05 |
| IC1 | EI-376112 | IC UPD6122G |
| TR1 | ET-302502 | TR 2SC2001 K |
| X1 | EI-376113 | OSC CE CSB455EB |
| 1 | SC-375525A | COVER BATTERY(B) |

# INDEX

| Part No. | Ref. No. |
|---|---|
| AX-N4001B010A | 2A |
| AX-N4001B010B | 2B |
| BA-V1077A600A | 1A |
| BA-V1077A600B | 1B |
| BD-V1077B300A | 1A |
| BD-V1077B300B | 1B |
| BD-V1077B300C | 1C |
| BL-V1075A130A | 1 |
| BL-V1075A130A | 34 |
| BL-367620-A | 29 |
| BL-367627 | 21 |
| BL-368475 | 37 |
| BL-500879T | 36 |
| BM-M3225A020A | 4 |
| BM-M3225A020A | 8 |
| BM-367631 | 3 |
| BM-367631 | 29 |
| BM-373098 | 2 |
| BM-373098 | 8 |
| BR-367618 | 5 |
| BR-367618 | 9 |
| BR-367619 | 6 |
| BR-367619 | 10 |
| BT-373993 | 7 |
| BT-373993 | T1A |
| BT-373994 | 8 |
| BT-373994 | T1B |
| BV-B373848 | 7 |
| BV-V1075A070A | 11 |
| BV-V1075A070A | 41 |
| BV-V1075A080A | 12 |
| BV-V1075A080A | 42 |
| BV-V1075A205A | 13 |
| BV-V1075A205A | 43 |
| BV-V1075A240A | 42 |
| BV-V1075A410A | 9 |
| BV-V1075A410A | 1 |
| BV-V1075A420A | 14 |
| BV-V1075A420A | 2 |
| BV-373934 | 10 |
| BV-373934 | 2 |
| EC-361942 | C1 |
| EC-368823 | 15 |
| EC-368823 | C500 |
| EC-378327 | C25 |
| ED-307572 | 25 |
| ED-307572 | D1 |
| ED-307572 | D2 |
| ED-307572 | D3 |
| ED-307572 | D4 |
| ED-307572 | D200 |
| ED-307572 | D202 |
| ED-307572 | D203 |
| ED-307572 | D204 |
| ED-307572 | D500 |
| ED-307572 | D501 |
| ED-307572 | D502 |
| ED-307572 | D503 |
| ED-307572 | D504 |
| ED-307572 | D506 |
| ED-307572 | D507 |
| ED-307572 | D508 |
| ED-307572 | D509 |
| ED-307572 | D510 |
| ED-307572 | D511 |
| ED-307572 | D512 |
| ED-307572 | D514 |
| ED-307572 | D519 |
| ED-307572 | D521 |
| ED-307572 | D530 |
| ED-307572 | D400 |
| ED-307572 | D401 |
| ED-307572 | D700 |
| ED-307572 | D701 |
| ED-307572 | D800 |
| ED-307572 | D900 |
| ED-307572 | D901 |
| ED-307572 | D902 |
| ED-307572 | D903 |
| ED-307572 | D904 |
| ED-307572 | D905 |
| ED-307572 | D906 |
| ED-307572 | D907 |
| ED-307572 | D908 |
| ED-307572 | D911 |
| ED-307572 | D912 |
| ED-307572 | D913 |
| ED-307572 | D914 |
| ED-307572 | D915 |
| ED-307572 | D921 |
| ED-307572 | D951 |
| ED-307572 | D952 |
| ED-307572 | D953 |
| ED-307572 | D954 |
| ED-307572 | D955 |
| ED-307572 | D5 |
| ED-307572 | D9 |
| ED-307572 | D10 |
| ED-307572 | D524 |
| ED-307572 | D525 |
| ED-307572 | D526 |
| ED-307572 | D527 |
| ED-344280 | 24 |
| ED-344280 | D2 |
| ED-344280 | D3 |
| ED-344280 | D4 |
| ED-346525 | 32 |
| ED-346525 | D12 |
| ED-346541 | 34 |
| ED-346541 | D516 |
| ED-346543 | 35 |
| ED-346543 | D916 |
| ED-351419 | 33 |
| ED-351419 | D919 |
| ED-356424 | 17 |
| ED-356424 | D917 |
| ED-356424 | D918 |
| ED-360409 | 20 |
| ED-360409 | D920 |
| ED-365699 | 31 |
| ED-365699 | D529 |
| ED-367202 | 27 |
| ED-367202 | D3 |
| ED-367202 | D4 |
| ED-367693 | 29 |
| ED-367693 | D7 |
| ED-367693 | D8 |
| ED-368826 | 16 |
| ED-368826 | D950 |
| ED-371512 | 23 |
| ED-371512 | D15 |
| ED-371512 | D16 |
| ED-371512 | D20 |
| ED-373101 | 18 |
| ED-373101 | 11 |
| ED-376111 | 19 |
| ED-376111 | D1 |
| ED-376598 | 30 |
| ED-376598 | D11 |
| ED-376838 | 22 |
| ED-376838 | D21 |
| ED-379041 | 28 |
| ED-379041 | D13 |
| ED-379298 | 21 |
| ED-379298 | D1 |
| ED-624903 | 26 |
| ED-624903 | D201 |
| ED-624903 | D528 |
| EE-373926 | 36 |
| EE-373926 | 1 |
| EF-258344 | 38 |
| EF-258344 | F1B |
| EF-306956 | 39 |
| EF-306956 | F2A |
| EF-309391 | 40 |
| EF-309391 | F1A |
| EF-601301 | 37 |
| EF-601301 | F2B |
| EH-363276 | 49 |
| EH-363276 | FL2 |
| EH-366605 | 43 |
| EH-366605 | IB500 |
| EH-368109 | 41 |
| EH-368109 | IB900 |
| EH-368896 | 52 |
| EH-368896 | FL202 |
| EH-370413 | 45 |
| EH-370413 | DL400 |
| EH-370615 | 50 |
| EH-370615 | FL400 |
| EH-370811 | 47 |
| EH-370811 | FL1 |
| EH-370812 | 48 |
| EH-370812 | FL3 |
| EH-373145 | 51 |
| EH-373145 | FL200 |
| EH-373922 | 46 |
| EH-373922 | FL4 |
| EH-374010 | 42 |
| EH-374010 | IB901 |
| EH-374012 | 44 |
| EH-374012 | IB501 |
| EI-200573 | 72 |
| EI-200573 | IC201 |
| EI-318384 | 81 |
| EI-318384 | X400 |
| EI-337530 | 74 |
| EI-337530 | IC3 |
| EI-337625 | 55 |
| EI-337625 | IC509 |
| EI-347991 | 77 |
| EI-347991 | X500 |
| EI-353421 | 56 |
| EI-353421 | IC504 |
| EI-354095 | 60 |
| EI-354095 | IC502 |
| EI-360316 | 57 |
| EI-360316 | IC500 |
| EI-367271 | 73 |
| EI-367271 | IC904 |
| EI-367571 | 64 |
| EI-367571 | IC1 |
| EI-367904 | 68 |
| EI-367904 | IC401 |
| EI-367909 | 63 |
| EI-367909 | IC800 |
| EI-368152 | IC3 |
| EI-368182 | 66 |
| EI-368182 | IC506 |
| EI-368809 | 69 |
| EI-368809 | IC1 |
| EI-368825 | 80 |
| EI-368825 | X901 |
| EI-373023 | 71 |
| EI-373023 | IC400 |
| EI-373946 | 65 |
| EI-373946 | IC700 |
| EI-373952 | 76 |
| EI-373952 | IC901 |
| EI-373954 | 62 |
| EI-373954 | IC903 |
| EI-373955 | 70 |
| EI-373955 | IC902 |
| EI-373957 | 79 |
| EI-373957 | X900 |
| EI-373964 | 53 |
| EI-373964 | IC200 |
| EI-373965 | 67 |
| EI-373965 | IC202 |
| EI-373978 | 61 |
| EI-373978 | IC503 |
| EI-373980 | 54 |
| EI-373980 | IC501 |
| EI-373980 | IC507 |
| EI-373981 | 59 |
| EI-373981 | IC505 |
| EI-376112 | 75 |
| EI-376112 | IC1 |
| EI-376113 | 78 |
| EI-376113 | X1 |
| EI-376794 | 58 |
| EI-376794 | IC2 |
| EJ-373970 | P201 |
| EJ-373971 | P200 |
| EL-373102T | 33 |
| EM-373956 | 82 |
| EM-373956 | FL900 |
| EO-345865 | L3 |
| EO-345865 | L11 |
| EO-345866 | L205 |
| EO-345872 | L8 |
| EO-345876 | L6 |
| EO-345885 | L207 |
| EO-345887 | L408 |
| EO-345889 | L409 |
| EO-345889 | L807 |
| EO-368178 | L1 |
| EO-368893 | L4 |
| EO-368894 | L5 |
| EO-368895 | L9 |
| EO-370638 | L701 |
| EO-370639 | L700 |
| EO-375471 | 83 |
| EO-375471 | FL700 |
| EO-376179 | L202 |
| EO-376179 | L204 |
| EO-376179 | L206 |
| EO-376179 | L209 |
| EO-376179 | L210 |
| EO-376179 | L211 |
| EO-376179 | L212 |
| EO-376179 | L213 |
| EO-376179 | L500 |
| EO-376179 | L404 |
| EO-376179 | L405 |
| EO-376179 | L411 |
| EO-376179 | L800 |
| EO-376179 | L801 |
| EO-376179 | L802 |
| EO-376599 | L402 |
| EO-376599 | L805 |
| EO-376600 | L406 |
| EO-376600 | L410 |
| EO-376600 | L803 |
| EO-376600 | L900 |
| EO-376600 | L902 |
| EO-376602 | L201 |
| EO-376606 | L403 |
| EO-376607 | L200 |
| EO-376609 | L203 |
| EO-376610 | L401 |
| EO-376610 | L412 |
| EO-376611 | L804 |
| EO-376612 | L208 |
| EO-376614 | L10 |
| EO-376616 | L901 |
| EO-376856 | L2 |
| EO-376861 | L806 |
| EQ-376837 | 84 |
| EQ-376837 | RL1 |
| ER-318400 | 85 |
| ER-318400 | FR1 |
| ER-356573 | 87 |
| ER-356573 | R1 |
| ER-378385 | R26 |
| ER-378414 | 86 |
| ER-378414 | FR500 |
| ES-349474 | 92 |
| ES-349474 | SW900 |
| ES-349474 | SW901 |
| ES-349474 | SW902 |
| ES-349474 | SW903 |
| ES-349474 | SW904 |
| ES-349474 | SW905 |
| ES-349474 | SW906 |
| ES-349474 | SW907 |
| ES-349474 | SW908 |
| ES-349474 | SW909 |
| ES-349474 | SW910 |
| ES-349474 | SW911 |

# INDEX

| Part No. | Ref. No. |
|---|---|
| ES-349474 | SW912 |
| ES-349474 | SW913 |
| ES-349474 | SW914 |
| ES-349474 | SW915 |
| ES-349474 | SW916 |
| ES-349474 | SW951 |
| ES-349474 | SW952 |
| ES-349474 | SW953 |
| ES-349474 | SW954 |
| ES-349474 | SW955 |
| ES-349474 | SW956 |
| ES-373099 | 88 |
| ES-373099 | 27 |
| ES-373100 | 89 |
| ES-373100 | 36 |
| ES-375736 | 91 |
| ES-375736 | SW917 |
| ES-375736 | SW918 |
| ES-375736 | SW919 |
| ES-375737 | 90 |
| ES-375737 | SW957 |
| ET-302502 | 111 |
| ET-302502 | TR1 |
| ET-321644 | 110 |
| ET-321644 | TR10 |
| ET-353897 | 99 |
| ET-353897 | TR207 |
| ET-353899 | 109 |
| ET-353899 | TR9 |
| ET-353899 | TR11 |
| ET-353899 | TR16 |
| ET-353899 | TR17 |
| ET-353899 | TR18 |
| ET-353899 | TR200 |
| ET-353899 | TR212 |
| ET-353899 | TR215 |
| ET-353899 | TR515 |
| ET-353899 | TR516 |
| ET-353899 | TR521 |
| ET-353899 | TR402 |
| ET-353899 | TR409 |
| ET-353899 | TR801 |
| ET-353899 | TR805 |
| ET-353899 | TR1 |
| ET-354364 | 103 |
| ET-354364 | TR907 |
| ET-354364 | TR908 |
| ET-354364 | TR909 |
| ET-354365 | 100 |
| ET-354365 | TR517 |
| ET-354371 | 101 |
| ET-354371 | TR508 |
| ET-354371 | TR518 |
| ET-354414 | 104 |
| ET-354414 | TR8 |
| ET-354414 | TR202 |
| ET-354414 | TR209 |
| ET-354414 | TR214 |
| ET-354414 | TR503 |
| ET-354414 | TR504 |
| ET-354414 | TR505 |
| ET-354414 | TR520 |
| ET-354414 | TR800 |
| ET-354414 | TR900 |
| ET-354414 | TR901 |
| ET-354414 | TR902 |
| ET-354414 | TR903 |
| ET-354414 | TR906 |
| ET-354415 | 97 |
| ET-354415 | TR500 |
| ET-354415 | TR527 |
| ET-355669 | 113 |
| ET-355669 | TR2 |
| ET-356224 | 108 |
| ET-356224 | TR13 |
| ET-356224 | TR19 |
| ET-356224 | TR210 |
| ET-356224 | TR511 |
| ET-360067 | 116 |
| ET-360067 | TR2 |
| ET-360067 | TR3 |
| ET-360067 | TR4 |
| ET-360067 | TR6 |
| ET-360067 | TR7 |
| ET-360067 | TR201 |
| ET-360067 | TR206 |
| ET-360067 | TR208 |
| ET-360067 | TR211 |
| ET-360067 | TR213 |
| ET-360067 | TR501 |
| ET-360067 | TR513 |
| ET-360067 | TR400 |
| ET-360067 | TR401 |
| ET-360067 | TR403 |
| ET-360067 | TR405 |
| ET-360067 | TR406 |
| ET-360067 | TR407 |
| ET-360067 | TR410 |
| ET-360067 | TR700 |
| ET-360067 | TR802 |
| ET-360067 | TR804 |
| ET-360067 | TR5 |
| ET-360067 | TR6 |
| ET-360067 | TR7 |
| ET-361463 | 93 |
| ET-361463 | 12 |
| ET-361490 | 106 |
| ET-361490 | 30 |
| ET-363953 | 94 |
| ET-363953 | TR205 |
| ET-364093 | 107 |
| ET-364093 | TR11 |
| ET-366677 | 118 |
| ET-366677 | TR10 |
| ET-366677 | TR8 |
| ET-368084 | 115 |
| ET-368084 | TR404 |
| ET-368836 | 96 |
| ET-368836 | TR904 |
| ET-370310 | 105 |
| ET-370310 | TR524 |
| ET-373985 | 98 |
| ET-373985 | TR502 |
| ET-373985 | TR507 |
| ET-373985 | TR512 |
| ET-373985 | TR514 |
| ET-373985 | TR526 |
| ET-375777 | 112 |
| ET-375777 | TR1 |
| ET-375777 | TR5 |
| ET-375983 | 95 |
| ET-375983 | TR522 |
| ET-375986 | 102 |
| ET-375986 | TR525 |
| ET-376663 | 117 |
| ET-376663 | TR13 |
| ET-376663 | TR14 |
| ET-376818 | 114 |
| ET-376818 | TR9 |
| EV-356324 | VR2 |
| EV-356324 | VR3 |
| EV-356324 | VR202 |
| EV-356324 | VR203 |
| EV-356577 | VR700 |
| EV-356579 | VR206 |
| EV-356582 | VR701 |
| EV-356583 | VR207 |
| EV-356583 | VR208 |
| EV-358829 | VR200 |
| EV-358829 | VR201 |
| EV-358829 | VR204 |
| EV-358829 | VR205 |
| EV-368135 | VR1 |
| EV-368340 | VR400 |
| EV-373958 | 119 |
| EV-373958 | VR900 |
| EV-374014 | VR209 |
| EV-374014 | VR210 |
| EV-376139 | VR1 |
| EV-378325 | VR501 |
| EW-356449 | 1 |
| EW-364369 | 14B |
| EW-371934 | 14A |
| HC-374197 | 120 |
| HC-374197 | 16 |
| HE-361456 | 121 |
| HE-361456 | 20 |
| MA-368799T | 28 |
| MB-373080 | 122 |
| MB-373080 | 38 |
| MB-373096 | 123 |
| MB-373096 | 33 |
| ML-367614 | 125 |
| ML-367614 | 2 |
| ML-367616 | 126 |
| ML-367616 | 3 |
| ML-367617 | 127 |
| ML-367617 | 7 |
| ML-367625 | 18 |
| ML-368792T | 9 |
| ML-368793T | 11 |
| ML-373036 | 3 |
| ML-373038 | 1 |
| ML-373043 | 128 |
| ML-373043 | 6 |
| ML-373075 | 124 |
| ML-373075 | 5 |
| ML-500730T | 14 |
| ML-500881 | 129 |
| ML-500881 | 31 |
| MR-373045 | 31 |
| MR-373087 | 25 |
| MS-368798T | 5 |
| MS-372186 | 12 |
| MS-373095 | 11 |
| MZ-V1075A090A | 134 |
| MZ-V1075A090A | 14 |
| MZ-V1075A100A | 135 |
| MZ-V1075A100A | 16 |
| MZ-367628 | 137 |
| MZ-367628 | 23 |
| MZ-368790T | 1 |
| MZ-368791T | 2 |
| MZ-368794T | 138 |
| MZ-368794T | 4 |
| MZ-368795T | 139 |
| MZ-368795T | 8 |
| MZ-368797T | 131 |
| MZ-368797T | 6 |
| MZ-373079 | 1 |
| MZ-500707T | 132 |
| MZ-500707T | 20 |
| MZ-500715T | 133 |
| MZ-500715T | 26 |
| MZ-500716T | 136 |
| MZ-500716T | 24 |
| MZ-500717T | 130 |
| MZ-500717T | 19 |
| SA-353927B | 8 |
| SC-375525A | 1 |
| SE-368476T | 37A |
| SE-374026 | 37B |
| SE-500932T | 39A |
| SE-500934T | 39B |
| SM-500675T | 4 |
| SM-500676T | 5 |
| SP-500680T | 3 |
| SP-500772 | 12 |
| SP-500867T | 2 |
| SP-500870T | 3 |
| SP-500887T-A | 30 |
| SZ-375956T | 3 |
| TR-373025 | 140 |
| TR-373025 | TR3 |
| TR-373025 | TR4 |
| VT-367622 | 141 |
| VT-367622 | 43 |
| VT-373884 | 4 |
| ZG-373046 | 32 |
| ZG-373530 | 38 |
| ZG-373534 | 6 |
| ZG-373535 | 8 |
| ZG-373536 | 4 |
| ZG-373539 | 30 |
| ZG-373541 | 17 |
| ZG-373542 | 15 |
| ZG-373546 | 22 |
| ZG-373548 | 4 |
| ZG-373894 | 2 |
| ZG-373900 | 15 |
| ZG-374022 | 22 |
| ZG-375953T | 7 |
| ZG-375954T | 10 |
| ZG-375955T | 12 |
| ZG-375957T | 25 |
| ZG-375958T | 27 |
| ZG-375959T | 22 |
| ZG-500735T | 17 |
| ZG-500735T | 19 |
| ZG-500767 | 40 |
| ZG-500792 | 14 |
| ZG-500794 | 33 |
| ZS-201464 | 44 |
| ZS-321298 | 3 |
| ZS-321298 | 18 |
| ZS-362378 | 4 |
| ZS-362378 | 7 |
| ZS-362378 | 10 |
| ZS-364545 | 28 |
| ZS-364545 | 9 |
| ZS-368173 | 13 |
| ZS-368524 | 13 |
| ZS-368547 | 11 |
| ZS-370047 | 11 |
| ZS-373532 | 32 |
| ZS-373895 | 7 |
| ZS-373895 | 9 |
| ZS-373895 | 27 |
| ZS-373895 | 28 |
| ZS-373895 | 37 |
| ZS-373896 | 19 |
| ZS-373897 | 35 |
| ZS-373899 | 17 |
| ZS-374023 | 13 |
| ZS-378341 | 41 |
| ZS-419782 | 10 |
| ZS-464703 | 21 |
| ZS-467796 | 9 |
| ZS-479474 | 5 |
| ZS-479474 | 10 |
| ZS-563444 | 6 |
| ZW-324417 | 39 |
| ZW-324417 | 5 |
| ZW-332843 | 45 |
| ZW-350839 | 26 |
| ZW-350839 | 40 |
| ZW-373088 | 23 |
| ZW-373089 | 24 |
| ZW-373898 | 35 |
| ZW-373898 | 25 |
| ZW-373901 | 34 |
| ZW-516993 | 13 |
| ZZ-368635 | 6 |

# ABBREVIATIONS (VIDEO)

| ABBREVIATION | EXPLANATION | ABBREVIATION | EXPLANATION |
|---|---|---|---|
| AC | Alternating Current | LM STP | Loading Motor SToP |
| ACC | Auto Color Control | LP | Long Play |
| A/C | Audio and Control | LPF | Low Pass Filter |
| ADJ | ADJust(ment) | LSW | Loading SWitch |
| AFC | Auto Frequency Control | ME-SECAM | Middle East SECAM |
| AFT | Auto Fine Tuning | MI-COM | MIcro COMputer |
| AGC | Auto Gain Control | MM | Mono-stayble Multi |
| AH(P) | Audio Head (Play Back) | MRS | Motor ReverSe |
| AH(R) | Audio Head (Record) | NG | Noise Gate |
| AL | ALl | NON-LIN | NON-LINear |
| AL | ALways | N.T.S.C. | National Television System Committee |
| ALC | Auto Level Control | O MUTE | Output MUTE |
| A-SW·P | Audio-SWitching·Pulse | OSC | OSCillator |
| A·MUTE | Audio·MUTE | PAL | Phase Alternation Line |
| AUT/MAN | AUTO/MANual | PB | Play Back |
| ANT | ANTenna | P-COM | Phase-COMparator |
| APC | Automatic Phase Control | PDN | Power DowN |
| ASSY | ASSemblY | PG | Pulse Generator |
| BAL | BALance | PL, PLG | PLunger (PLunGer) |
| B/C | Buzz and Charactor | POS | POSition |
| B DOWN | Break DOWN | PRG | PRoGram |
| BGP | Burst Gate Pulse | P & S | Power supply & System control |
| BLK | BLacK or BLock | PU | Pick Up (head, pulse) |
| BM | Balanced Modulator | PWR | PoWeR |
| BPF | Band Pass Filter | Q | Quality factor |
| BS | Band Select | RC | Rotary Control |
| BS (SB) | Brake Supply (Supply Brake) | REC | RECord |
| BT (TB) | Brake Takeup (Takeup Brake) | REF | REFerence |
| BU | Back Up | REF-V | REFerence Vertical signal |
| B/W | Black and White | REG | REGulator |
| CCIR | Comité Consultatif International des Radio Communications | REV (REVW) | REView (REVieW) |
| CH (Ch.) | CHannel (Channel) | REW | REWind |
| CK | Color Killer | RFB | Radio Frequency Booster |
| CLK | CLocK | RM | Reel Motor |
| CLP | CLiP | RM PWR | Reel Motor PoWeR |
| CM | Capstan Motor | R·S SW | Record·Safety SWitch |
| CN | CoNnector | RST (RES) | ReSeT (RESet) |
| COMP | COMParator | RVS | ReVerSe |
| Comp | Comparison | S | Sensor, Shield |
| C or R | Cue or Review | SC | SimulCast |
| CR 1 | Cue Review 1 (high) | S CLK | Serial CLocK |
| CSW | Cassette SWitch | S & A | Servo & Audio |
| CTL | ConTroL | SECAM | Séquentiel à Memoire |
| CUE | CUE | SEP (SEPA) | SEParator (SEParator) |
| CW | Carrier Wave | SFP | Sync Front Pulse |
| DAC | Digital to Analog Converter | S & H | Sample and Hold |
| DC | Direct Current | SLP | Super Long Play |
| DEMOD | DEMODulator | SP | Standard Play |
| DET | DETect (DETector) | SPD | SPeeD |
| DL | Delay Line | SRP | Supply Reel Pulse |
| DM | Drum Motor | SRV | SeRVo |
| DOC | Drop Out Compensator | SOW | Sync On Word |
| D·P·E | Drum·Phase·Error | STBY | STandBY |
| D·PG | Drum·Pulse Generator | SW | SWitch |
| D·TPZ | Drum·TraPeZoid | SW'NG | SWitchiNG |
| EE | Electronic to Electronic | SWP | SWitching Pulse |
| EF | Emitter Follower | SYNC | SYNChronize |
| EM | Eject Motor | T-AUDIO | Tuner AUDIO |
| EMPHA | EMPHAsis | TA-MUTE | Tuner Audio MUTE |
| ENVIN | ENVelope INput | TPZ (TRAPE) | TraPeZoid (TRAPEzoid) |
| ESW | Eject SWitch | TRK | TRacKing |
| EQ | EQualizer | TRP | Take up Reel Pulse |
| FE | Full track Erase | T/U | Take Up |
| FF | Flip-Flop | TV | TeleVision |
| FG | Frequency Generator | UHF | Ultra High Frequency |
| Fig. | Figure | UNR | UNRegulated |
| FM | Frequency Modulation | V | Vertical |
| Fo | resonance Frequency | VCO | Voltage Controlled Oscillator |
| FREQ | FREQuency | VD | Vertical Drive |
| FSI | Field Start Inhibit | VF | Voltage for Fine tuning |
| GND | GrouND | VHF | Very High Frequency |
| H | Horizontal | VHS | Video Home System |
| HP | Horizontal (sync) Pulse | VID | VIDeo |
| HPF | High Pass Filter | VIDEO-J | VIDEO Judge |
| HT | HeaTer | VIF | Video Intermediate Frequency |
| IC | Integrated Circuit | VJ | Video Judge |
| ID | IDentification | VM | Voltage for Memory |
| IDL | IDLe (Voltage) | VOB | Video On Blank |
| INS | INSert | VOW | Video On Word |
| INV | INVerter | VP | Vertical (sync) Pulse |
| L·CTL | Lamp·ConTroL | VT | Voltage for Tuning |
| LED | Light Emitting Diode | WHT | WHiTe |
| LDI | LoaD Input | 2H | 2 Hour (SP) |
| LM | Loading Motor | 6H | 6 Hour (SLP) |

**AKAI ELECTRIC CO., LTD.**
12-14, 2-Chome, Higashi-Kojiya, Ohta-Ku, Tokyo, Japan
TEL: Tokyo (742) 5111 CABLE: HIFIAKAI TOKYO TELEX: J26261
Printed No. 870805-I1-1700 Printed Date: September 7, 1987
950 Printed in Japan

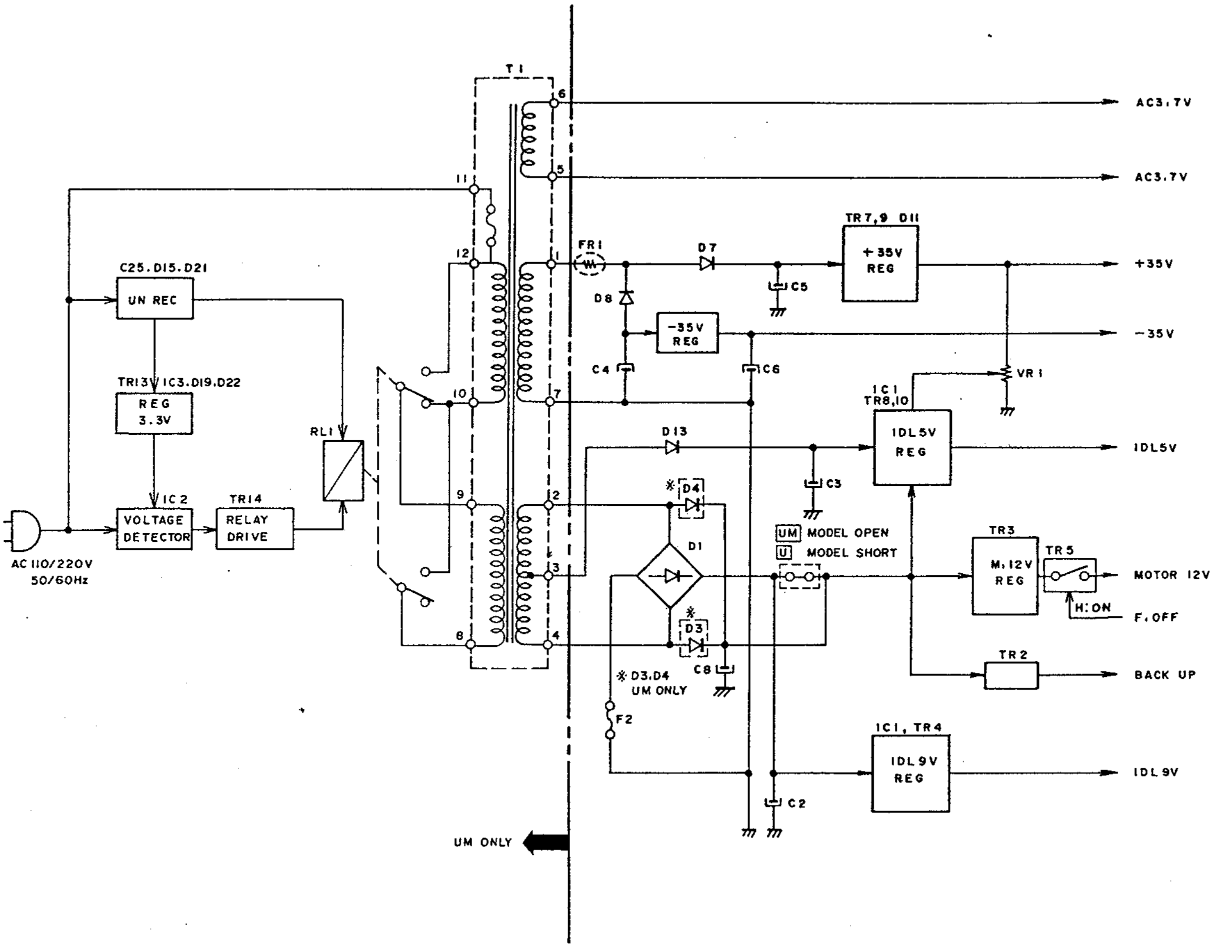
# AKAI

## MODEL VS-35U
## MODEL VS-33U/UM

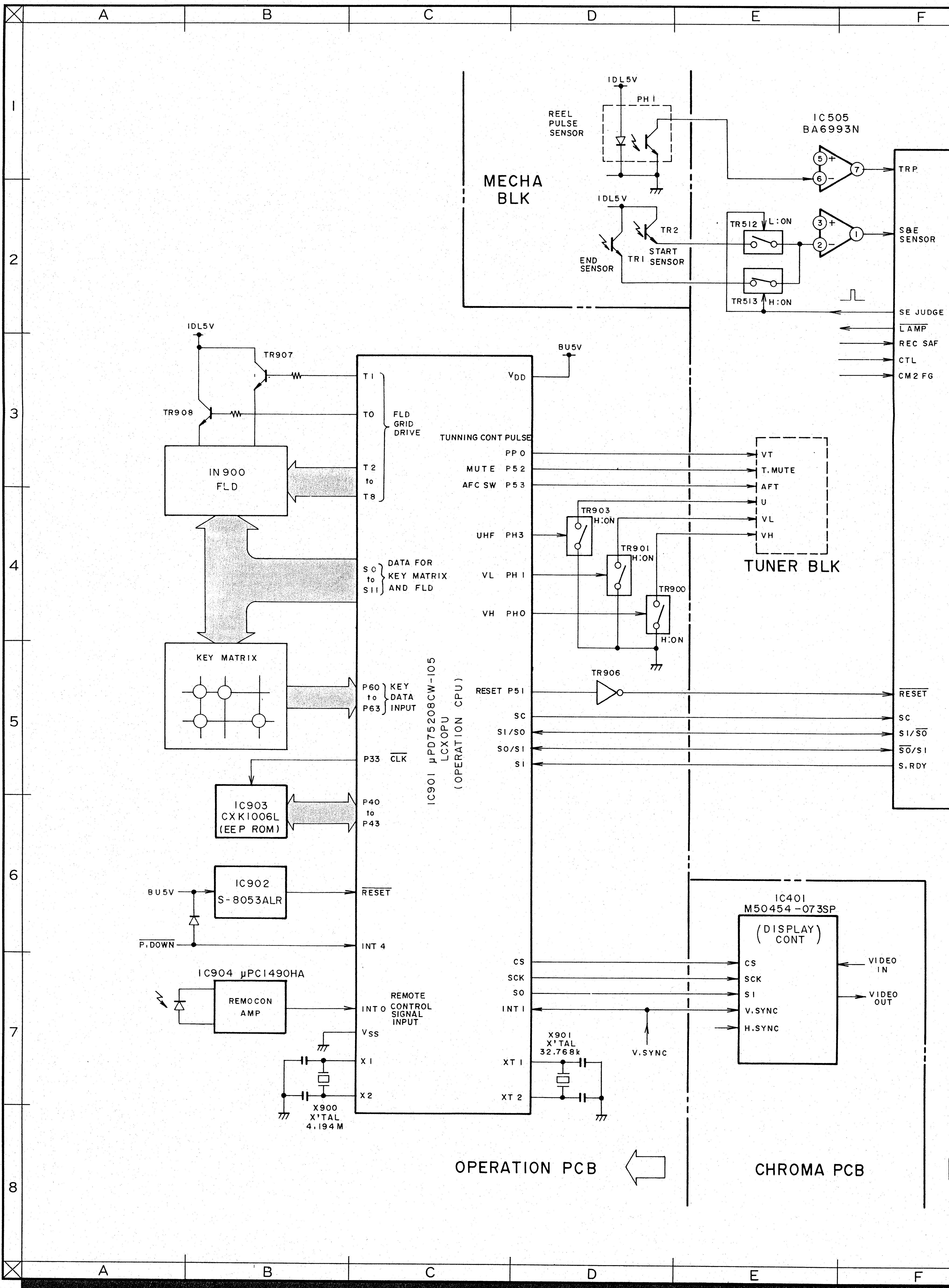
# SCHEMATIC DIAGRAM AND PC BOARDS

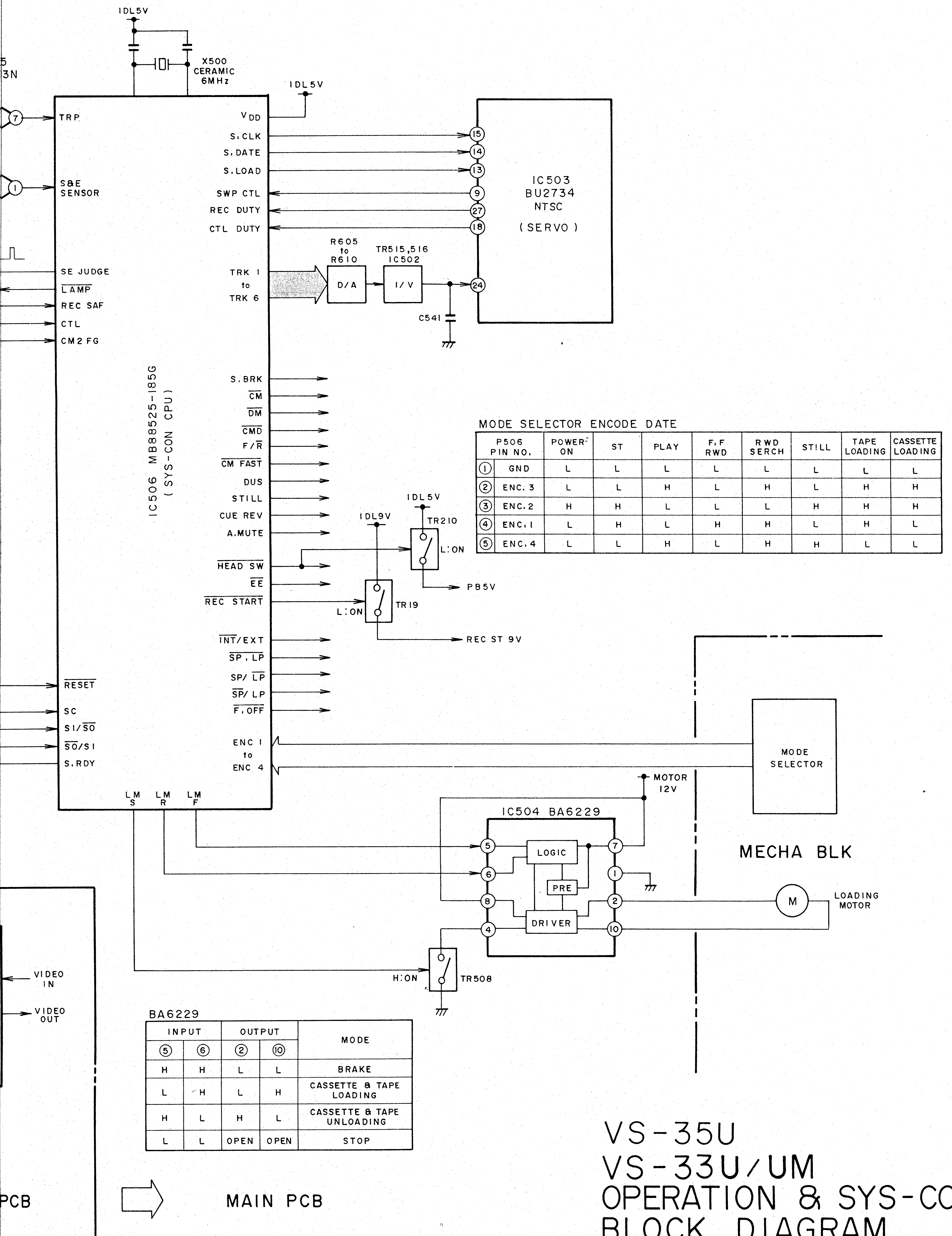
TABLE OF CONTENTS

1. POWER SUPPLY BLOCK DIAGRAM .................................. 2
2. OPERATION & SYS-CON BLOCK DIAGRAM.......................... 3
3. SERVO BLOCK DIAGRAM ........................................ 4
4. VIDEO & AUDIO BLOCK DIAGRAM ................................ 5
5. CONNECTION DIAGRAM.......................................... 6
6. MOTOR SCHEMATIC DIAGRAM, POWER SUPPLY PC BOARD & OTHER PC BOARDS .................. 7
7. MAIN SCHEMATIC DIAGRAM ..................................... 8
8. MAIN PC BOARD............................................... 9
9. CHROMA/AUDIO & PRE-AMP/OPERATION SCHEMATIC DIAGRAM ........................................10
10. CHROMA/AUDIO & PRE-AMP/OPERATION PC BOARD.............11
11. RC-V33A/35A REMOTE CONTROL UNIT SCHEMATIC DIAGRAM.... 12
12. SCHEMATIC DIAGRAM OF ICs.......................................12


T1
6
5
11
12
1
10
7
9
2
3
4
8
AC3.7V
AC3.7V
FR1
D7
TR7,9 D11
+35V REG
C5
+35V
D8
-35V REG
-35V
C4
C6
VR1
IC1 TR8,10
D13
IDL5V REG
C3
IDL5V
C25.D15.D21
UN REC
TR13 IC3.D19.D22
REG 3.3V
RL1
IC2
TR14
VOLTAGE DETECTOR
RELAY DRIVE
AC 110/220V 50/60Hz
※ D4
D1
※ D3
C8
※ D3.D4 UM ONLY
UM MODEL OPEN
U MODEL SHORT
TR3
M.12V REG
TR5
MOTOR 12V
H:ON
F.OFF
TR2
BACK UP
F2
IC1, TR4
IDL9V REG
IDL9V
C2
UM ONLY

VS-33U,UM
VS-35U
POWER SUPPLY
BLOCK DIAGRAM
NO.4-1 870807A


A
B
C
D
E
F
1
2
3
4
5
6
7
8
MECHA BLK
IDL5V
PH1
REEL PULSE SENSOR
IDL5V
TR2
END SENSOR
TR1
START SENSOR
IC505
BA6993N
TRP
TR512
L:ON
TR513
H:ON
S&E SENSOR
SE JUDGE
LAMP
REC SAF
CTL
CM2 FG
BU5V
IDL5V
TR907
TR908
IN900
FLD
T1
T0
T2
to
T8
FLD GRID DRIVE
VDD
TUNNING CONT PULSE
PP0
MUTE P52
AFC SW P53
UHF PH3
VL PH1
VH PH0
TR903
H:ON
TR901
H:ON
TR900
H:ON
VT
T.MUTE
AFT
U
VL
VH
TUNER BLK
S0
to
S11
DATA FOR KEY MATRIX AND FLD
KEY MATRIX
P60
to
P63
KEY DATA INPUT
IC901 μPD75208CW-105
LCX0PU
(OPERATION CPU)
RESET P51
TR906
RESET
SC
SI/SO
SO/SI
SI
SC
SI/SO
SO/SI
S.RDY
P33 CLK
IC903
CXK1006L
(EEP ROM)
P40
to
P43
IC902
S-8053ALR
BU5V
P.DOWN
RESET
INT 4
IC904 μPC1490HA
REMOCON AMP
INT 0
REMOTE CONTROL SIGNAL INPUT
VSS
X1
X2
X900
X'TAL
4.194M
CS
SCK
SO
INT1
XT1
XT2
X901
X'TAL
32.768k
V.SYNC
IC401
M50454-073SP
(DISPLAY CONT)
CS
SCK
SI
V.SYNC
H.SYNC
VIDEO IN
VIDEO OUT
OPERATION PCB
CHROMA PCB


IDL5V
X500 CERAMIC 6MHz
IDL5V
TRP
VDD
S.CLK
S.DATE
S.LOAD
S&E SENSOR
SWP CTL
REC DUTY
CTL DUTY
IC503 BU2734 NTSC (SERVO)
R605 to R610
TR515,516 IC502
D/A
I/V
C541
SE JUDGE
LAMP
REC SAF
CTL
CM2 FG
TRK 1 to TRK 6
IC506 MB88525-185G (SYS-CON CPU)
S.BRK
CM
DM
CMD
F/R
CM FAST
DUS
STILL
CUE REV
A.MUTE
HEAD SW
EE
REC START
IDL5V
IDL9V
TR210
L:ON
PB5V
TR19
L:ON
REC ST 9V
INT/EXT
SP.LP
SP/LP
SP/LP
F.OFF
RESET
SC
SI/SO
SO/SI
S.RDY
ENC 1 to ENC 4
MODE SELECTOR
MOTOR 12V
LM S
LM R
LM F
IC504 BA6229
LOGIC
PRE
DRIVER
M
LOADING MOTOR
MECHA BLK
H:ON
TR508
VIDEO IN
VIDEO OUT
PCB
MAIN PCB

MODE SELECTOR ENCODE DATE

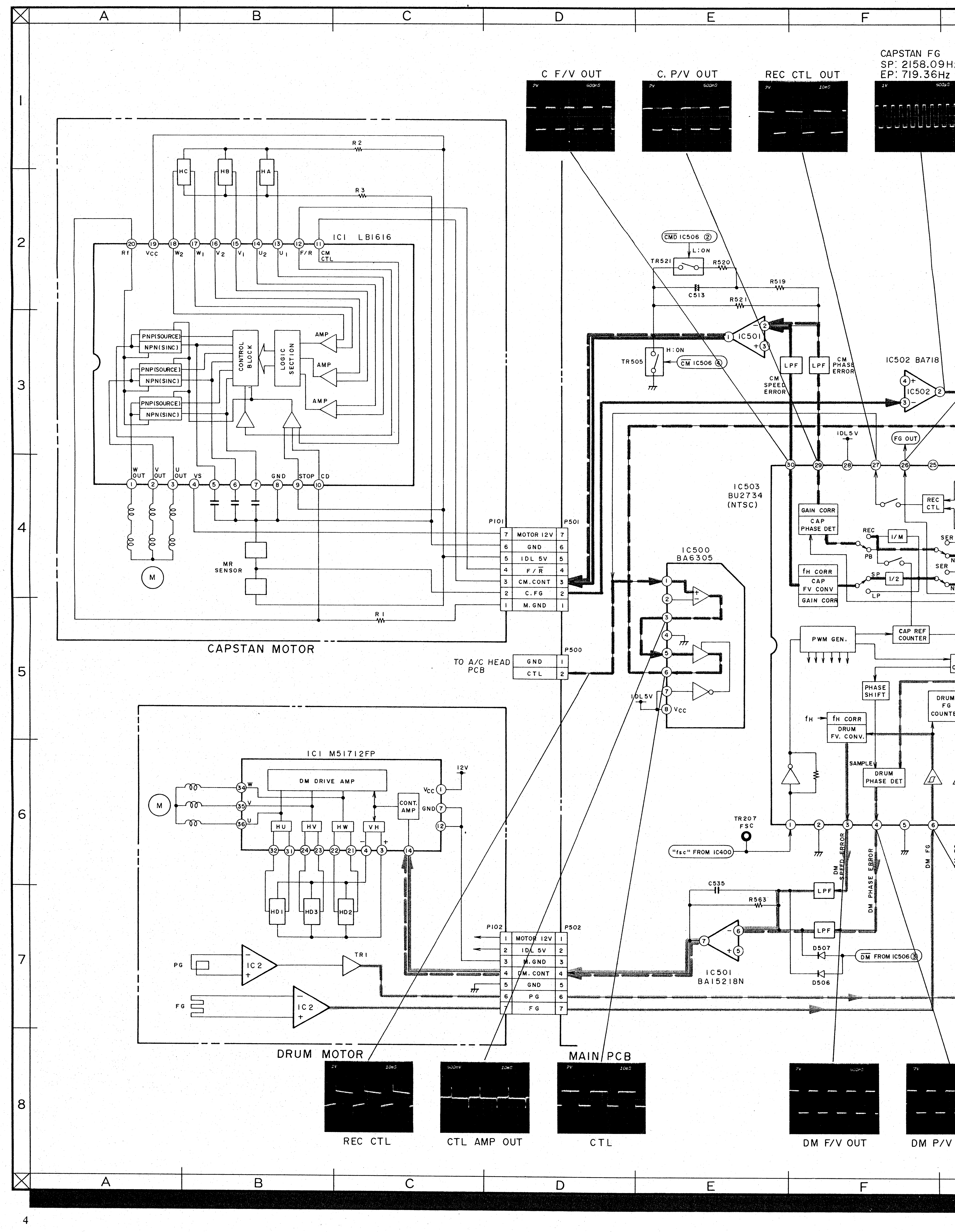
| P506 PIN NO. | | POWER ON | ST | PLAY | F.F RWD | RWD SERCH | STILL | TAPE LOADING | CASSETTE LOADING |
|---|---|---|---|---|---|---|---|---|---|
| ① | GND | L | L | L | L | L | L | L | L |
| ② | ENC. 3 | L | L | H | L | H | L | H | H |
| ③ | ENC. 2 | H | H | L | L | L | H | H | H |
| ④ | ENC. 1 | L | H | L | H | H | L | H | L |
| ⑤ | ENC. 4 | L | L | H | L | H | H | L | L |

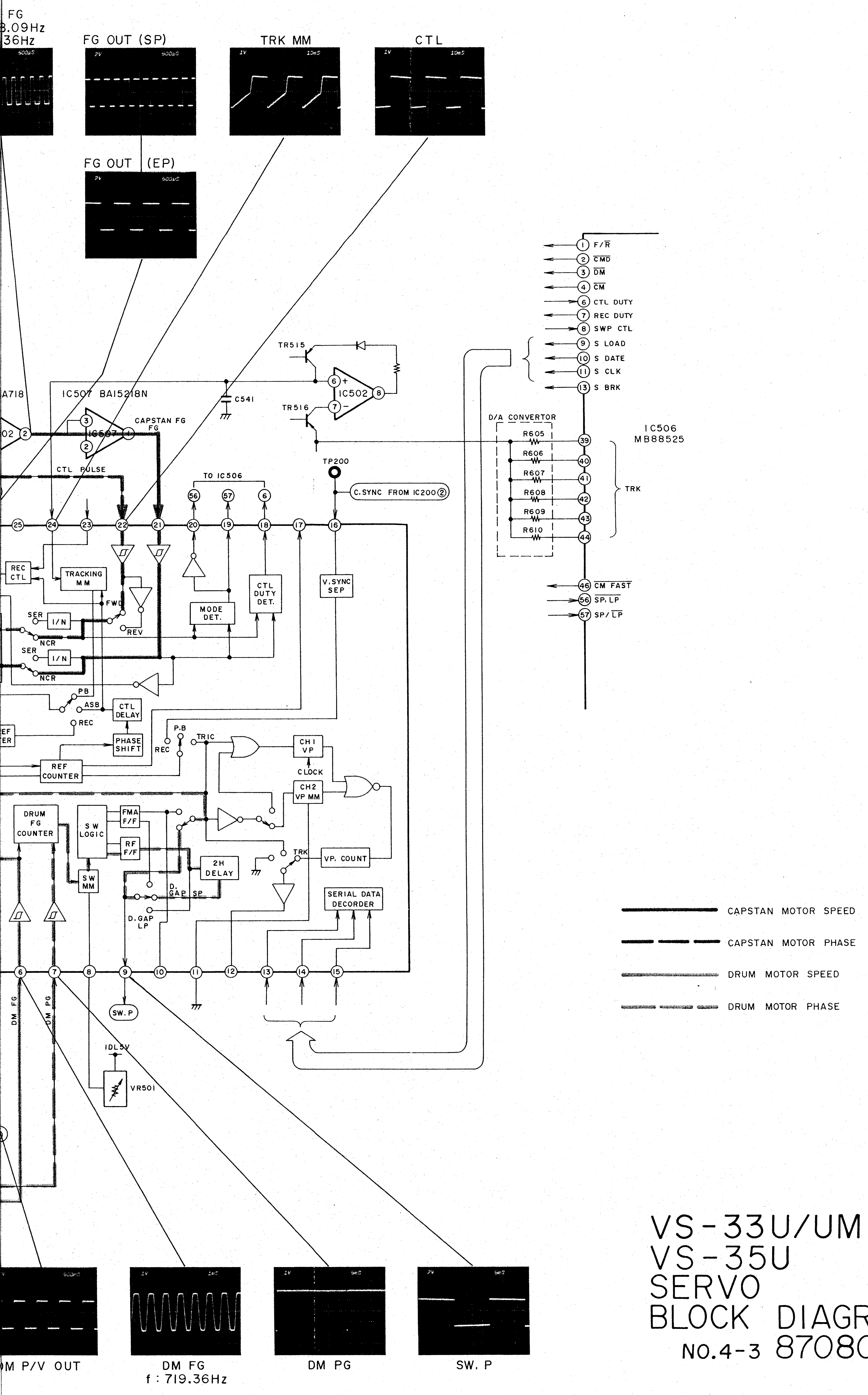
BA6229

| INPUT | | OUTPUT | | MODE |
|---|---|---|---|---|
| ⑤ | ⑥ | ② | ⑩ | |
| H | H | L | L | BRAKE |
| L | H | L | H | CASSETTE & TAPE LOADING |
| H | L | H | L | CASSETTE & TAPE UNLOADING |
| L | L | OPEN | OPEN | STOP |

# VS-35U
# VS-33U/UM
# OPERATION & SYS-CON BLOCK DIAGRAM

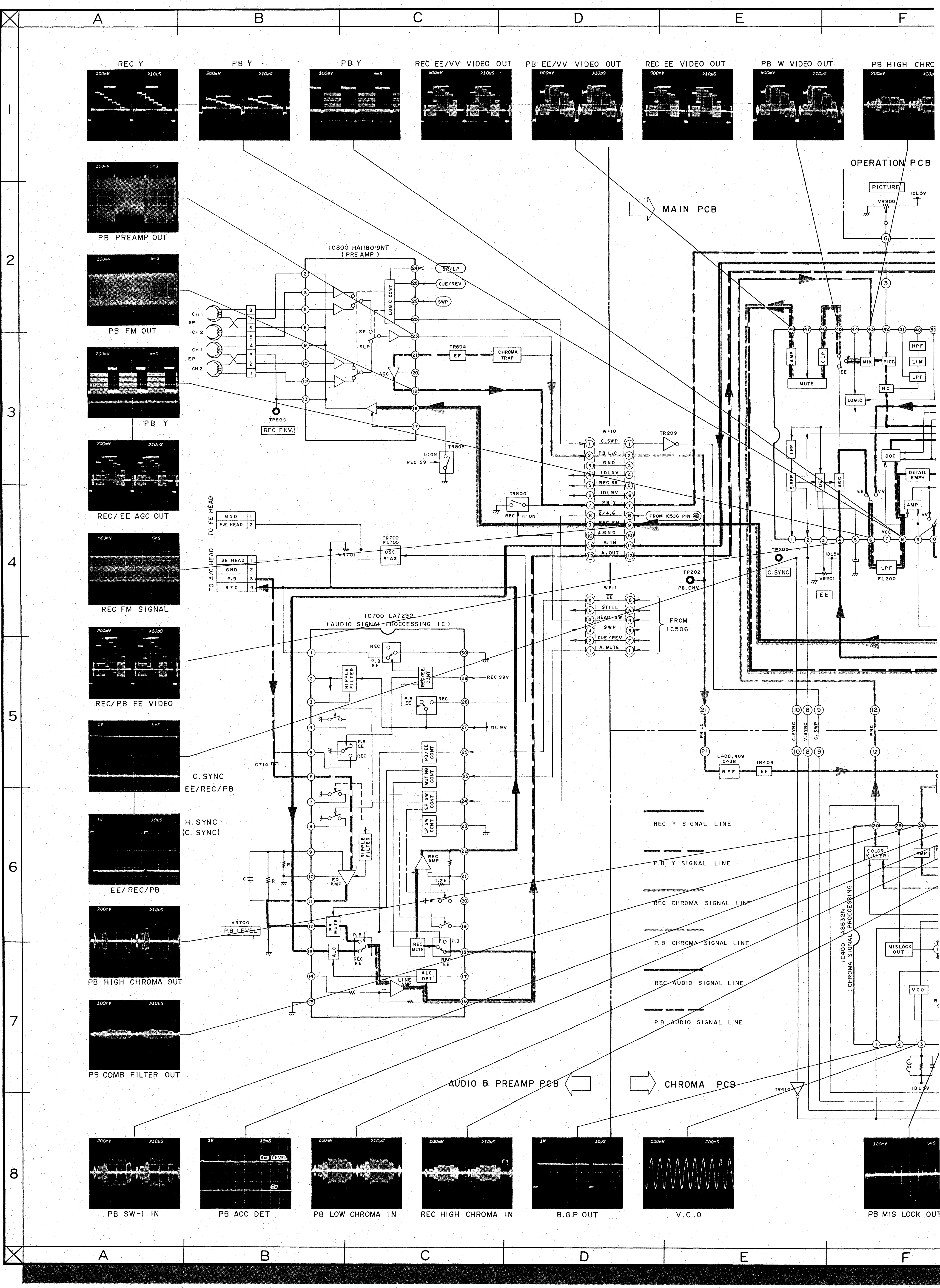
NO.4 -2 870602A

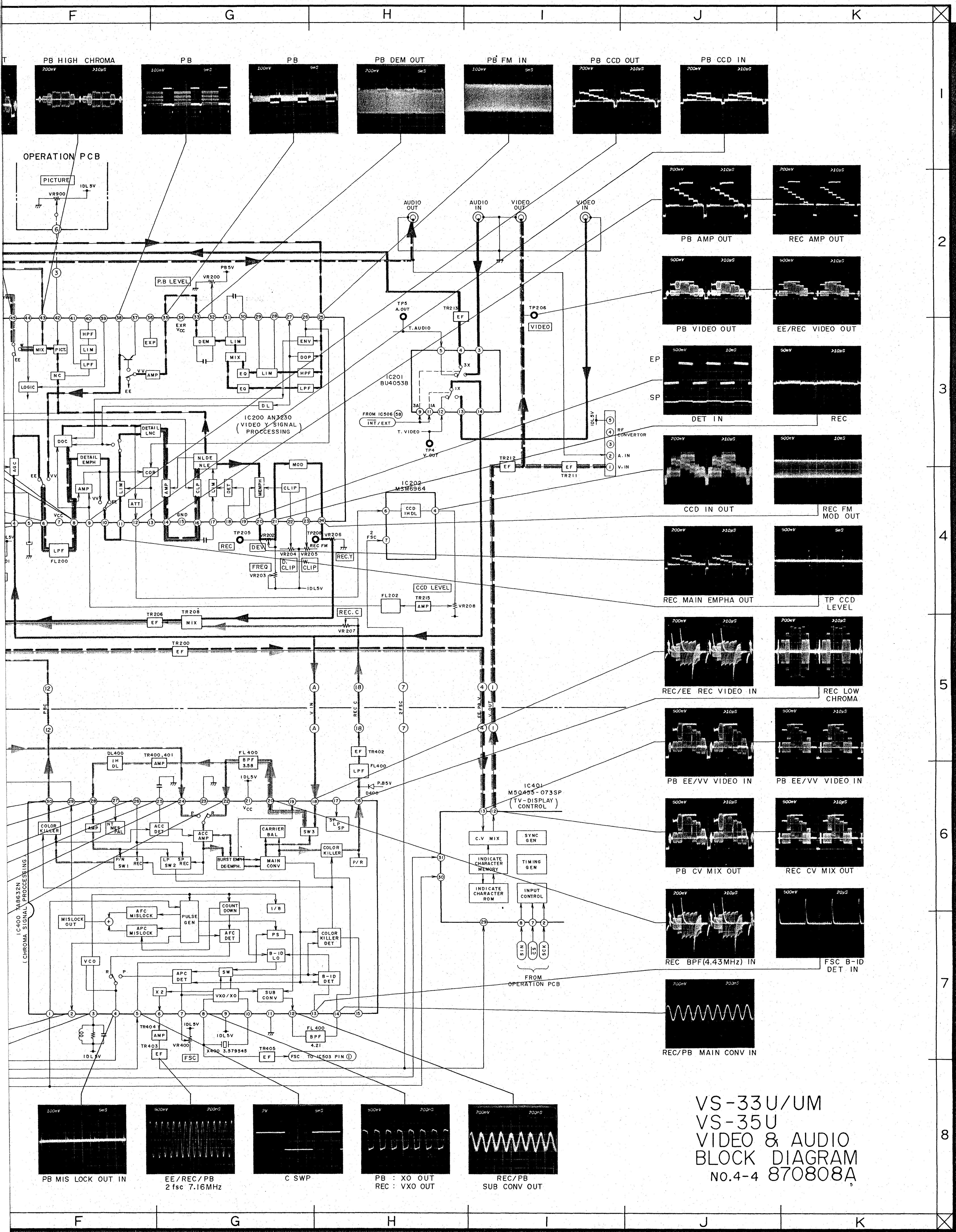

A
B
C
D
E
F
1
2
3
4
5
6
7
8
C F/V OUT
C. P/V OUT
REC CTL OUT
CAPSTAN FG
SP: 2158.09H
EP: 719.36Hz
R2
R3
HC
HB
HA
IC1 LB1616
Rf
VCC
W2
W1
V2
V1
U2
U1
F/R
CM CTL
PNP(SOURCE)
NPN(SINC)
CONTROL BLOCK
LOGIC SECTION
AMP
W OUT
V OUT
U OUT
VS
GND
STOP
CD
MR SENSOR
M
R1
CAPSTAN MOTOR
P101
P501
MOTOR 12V
GND
IDL 5V
F/R
CM.CONT
C.FG
M.GND
CMD IC506 ②
L:ON
TR521
R520
R519
C513
R521
IC501
TR505
H:ON
CM IC506 ④
LPF
CM SPEED ERROR
CM PHASE ERROR
IC502 BA718
IC502
IDL5V
FG OUT
IC503
BU2734
(NTSC)
GAIN CORR
CAP PHASE DET
REC
PB
I/M
SER
fH CORR
CAP FV CONV
SP
LP
1/2
IC500
BA6305
TO A/C HEAD PCB
P500
CTL
CAP REF COUNTER
PWM GEN.
PHASE SHIFT
DRUM FG COUNTE
fH
DRUM FV. CONV.
SAMPLE
DRUM PHASE DET
IDL5V
VCC
TR207 FSC
"fsc" FROM IC400
DM SPEED ERROR
DM PHASE ERROR
DM FG
C535
R563
D507
D506
DM FROM IC506 ③
IC501
BA15218N
IC1 M51712FP
DM DRIVE AMP
CONT. AMP
12V
HU
HV
HW
VH
HD1
HD3
HD2
P102
P502
DM. CONT
PG
FG
IC2
TR1
DRUM MOTOR
MAIN PCB
REC CTL
CTL AMP OUT
CTL
DM F/V OUT
DM P/V


FG
.09Hz
36Hz
FG OUT (SP)
TRK MM
CTL
FG OUT (EP)
F/R
CMD
DM
CM
CTL DUTY
REC DUTY
SWP CTL
S LOAD
S DATE
S CLK
S BRK
TR515
TR516
IC502
C541
A718
IC507 BA15218N
IC507
CAPSTAN FG
FG
CTL PULSE
TO IC506
TP200
C.SYNC FROM IC200②
D/A CONVERTOR
R605
R606
R607
R608
R609
R610
IC506
MB88525
TRK
CM FAST
SP, LP
SP/LP
REC CTL
TRACKING MM
FWD
REV
SER
I/N
NCR
MODE DET.
CTL DUTY DET.
V.SYNC SEP
PB
ASB
REC
CTL DELAY
PHASE SHIFT
REF COUNTER
P.B
REC
TRIC
CH1 VP
CLOCK
CH2 VP MM
DRUM FG COUNTER
SW LOGIC
FMA F/F
RF F/F
SW MM
2H DELAY
D. GAP SP
D. GAP LP
TRK
VP. COUNT
SERIAL DATA DECORDER
DM FG
DM PG
SW. P
IDL5V
VR501
CAPSTAN MOTOR SPEED
CAPSTAN MOTOR PHASE
DRUM MOTOR SPEED
DRUM MOTOR PHASE
M P/V OUT
DM FG
f : 719.36Hz
DM PG
SW. P

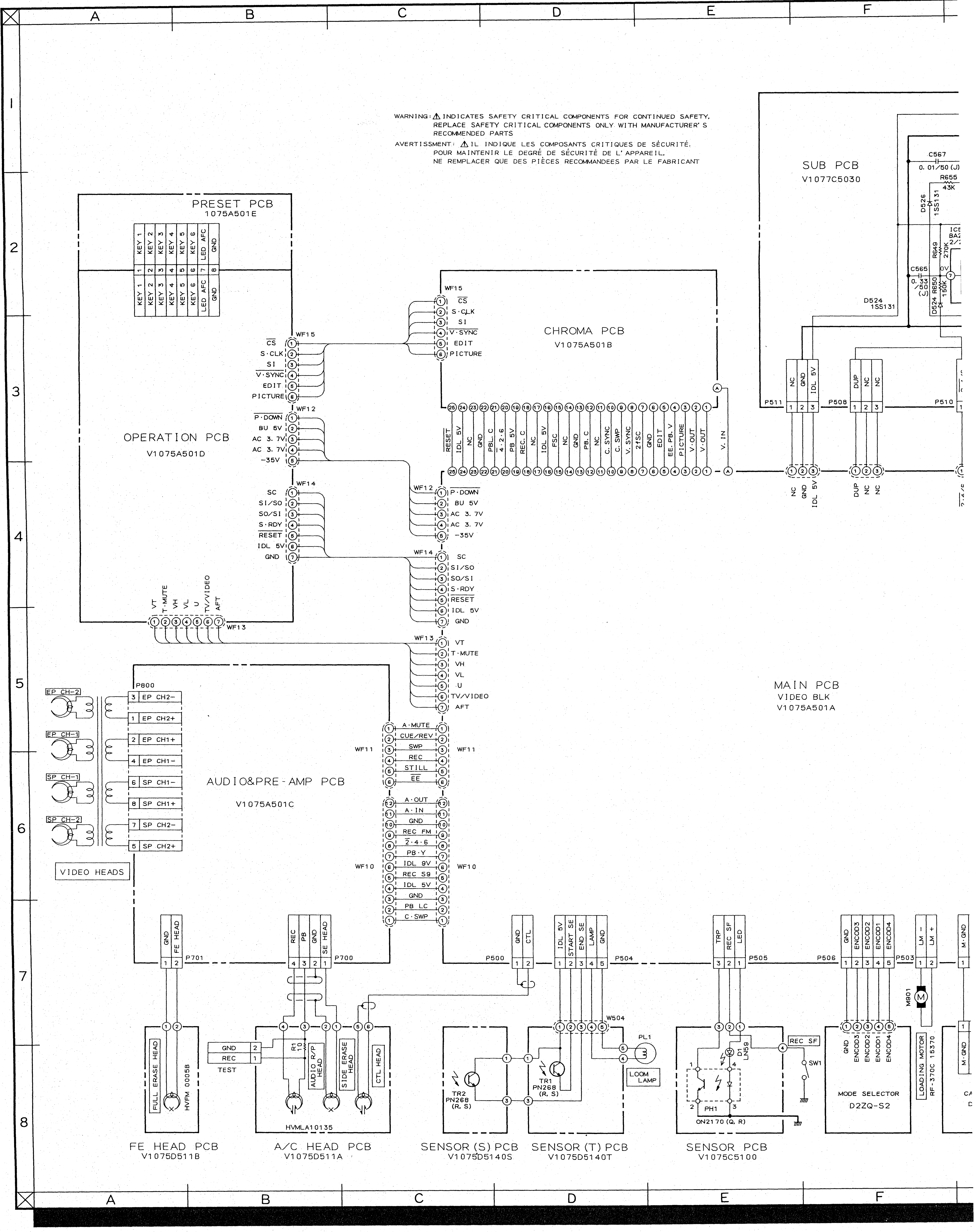
# VS-33U/UM
# VS-35U
# SERVO
# BLOCK DIAGRAM

NO.4-3 870809A


A
B
C
D
E
F
1
2
3
4
5
6
7
8
REC Y
PB Y
PB Y
REC EE/VV VIDEO OUT
PB EE/VV VIDEO OUT
REC EE VIDEO OUT
PB W VIDEO OUT
PB HIGH CHRO
PB PREAMP OUT
PB FM OUT
PB Y
REC/EE AGC OUT
REC FM SIGNAL
REC/PB EE VIDEO
C. SYNC
EE/REC/PB
H. SYNC
(C. SYNC)
EE/REC/PB
PB HIGH CHROMA OUT
PB COMB FILTER OUT
PB SW-1 IN
PB ACC DET
ACC LEVEL
0V
PB LOW CHROMA IN
REC HIGH CHROMA IN
B.G.P OUT
V.C.O
PB MIS LOCK OUT
OPERATION PCB
PICTURE
VR900
IDL 5V
MAIN PCB
IC800 HA118019NT
(PRE AMP)
SP/LP
CUE/REV
SWP
LOGIC CONT
SP
SLP
AGC
CH 1
SP
CH 2
CH 1
EP
CH 2
TR804
EF
CHROMA TRAP
TP800
REC. ENV.
TR805
L:ON
REC S9
TR800
REC H:ON
WF10
C. SWP
PB L.C.
GND
IDL5V
REC S9
IDL 9V
PB Y
2/4,6
REC FM
A.GND
A. IN
A. OUT
TR209
FROM IC506 PIN 49
TP200
C. SYNC
TP202
PB. ENV
WF11
EE
STILL
HEAD SW
SWP
CUE/REV
A. MUTE
FROM IC506
TO FE HEAD
GND
F.E HEAD
TO A/C HEAD
SE HEAD
GND
P.B
REC
TR700
FL700
OSC BIAS
VR701
IC700 LA7292
(AUDIO SIGNAL PROCCESSING IC)
REC
P.B EE
RIPPLE FILTER
REC/EE CONT
REC S9V
P.B EE
REC
IDL 9V
PB/EE CONT
MUTING CONT
EP SW CONT
LP SW CONT
C714
REC AMP
1.2k
EQ AMP
RIPPLE FILTER
VR700
P.B LEVEL
P.B MUTE
ALC
REC EE
REC MUTE
ALC DET
LINE AMP
AUDIO & PREAMP PCB
CHROMA PCB
REC Y SIGNAL LINE
P.B Y SIGNAL LINE
REC CHROMA SIGNAL LINE
P.B CHROMA SIGNAL LINE
REC AUDIO SIGNAL LINE
P.B AUDIO SIGNAL LINE
PB LC
C. SYNC
V. SYNC
C. SWP
PB C
L408, 409
C438
BPF
TR409
EF
TR410
IC400 LA8632N
(CHROMA SIGNAL PROCESSING)
COLOR KILLER
AMP
MISLOCK OUT
VCO
IDL 5V
AMP
CLP
MUTE
MIX
PICT.
HPF
LIM
LPF
NC
LOGIC
EE
LPF
S.SEP
DEF
AGC
DOC
DETAIL EMPH
AMP
VCC
LPF
FL200
IDL5V
VR201
EE


F
G
H
I
J
K
1
2
3
4
5
6
7
8
PB HIGH CHROMA
PB
PB
PB DEM OUT
PB FM IN
PB CCD OUT
PB CCD IN
OPERATION PCB
PICTURE
VR900
IDL5V
AUDIO OUT
AUDIO IN
VIDEO OUT
VIDEO IN
PB AMP OUT
REC AMP OUT
PB VIDEO OUT
EE/REC VIDEO OUT
EP
SP
DET IN
REC
CCD IN OUT
REC FM MOD OUT
REC MAIN EMPHA OUT
TP CCD LEVEL
REC/EE REC VIDEO IN
REC LOW CHROMA
PB EE/VV VIDEO IN
PB EE/VV VIDEO IN
PB CV MIX OUT
REC CV MIX OUT
REC BPF(4.43MHz) IN
FSC B-ID DET IN
REC/PB MAIN CONV IN
P.B LEVEL
VR200
PB 5V
EXR Vcc
TP5 A.OUT
T.AUDIO
TR213
EF
TP206
VIDEO
IC201 BU4053B
FROM IC506 (58)
INT/EXT
T. VIDEO
TP4 V.OUT
IC200 AN3230 (VIDEO Y SIGNAL PROCCESSING)
HPF
LIM
LPF
MIX
PICT.
NC
LOGIC
EXP
DEM
ENV
DOP
EQ
DL
DOC
DETAIL LNC
DETAIL EMPH
AMP
COR
NLDE NLE
CLIP
DET
MEMPH
MOD
ATT
AGC
GND
TP205
REC
DEV
VR202
VR204
VR205
TP208
REC FM
VR206
REC.Y
FREQ
VR203
D. CLIP
W. CLIP
IDL5V
FL200
IC202 M5M6964
CCD 1HDL
2 FSC
RF CONVERTOR
A. IN
V. IN
TR212
TR211
FL202
TR215
CCD LEVEL
VR208
REC. C
VR 207
TR206
TR208
TR200
PSC
V IN
REC C
2 FSC
EE PB V
V OUT
DL400 1H DL
TR400,401
FL400 BPF 3.58
IDL5V
EF
TR402
LPF
FL400
P.B5V
D400
IC401 M50455-073SP (TV-DISPLAY CONTROL)
C.V MIX
SYNC GEN
INDICATE CHARACTER MEMORY
TIMING GEN
INDICATE CHARACTER ROM
INPUT CONTROL
SIN
SCS
SCK
FROM OPERATION PCB
COLOR KILLER
NT MES PAL
ACC DET
ACC AMP
CARRIER BAL
SW3
SP LP SP
COLOR KILLER
P/R
P/N SW1
S REC
LP SW2
SP REC
BURST EMPH DEEMPH.
MAIN CONV
IC400 (AN632N) (CHROMA SIGNAL PROCESSING)
MISLOCK OUT
AFC MISLOCK
APC MISLOCK
PULSE GEN
COUNT DOWN
1/8
AFC DET
PS
COLOR KILLER DET
B-ID LO
B-ID DET
VCO
APC DET
SW
X 2
VXO/XO
SUB CONV
TR404
AMP
TR403
EF
VR400
FSC
X400 3.579545
TR405
FSC TO IC503 PIN (1)
FL 400 BPF 4.21
IDL 5V
PB MIS LOCK OUT IN
EE/REC/PB 2fsc 7.16MHz
C SWP
PB : XO OUT
REC : VXO OUT
REC/PB SUB CONV OUT

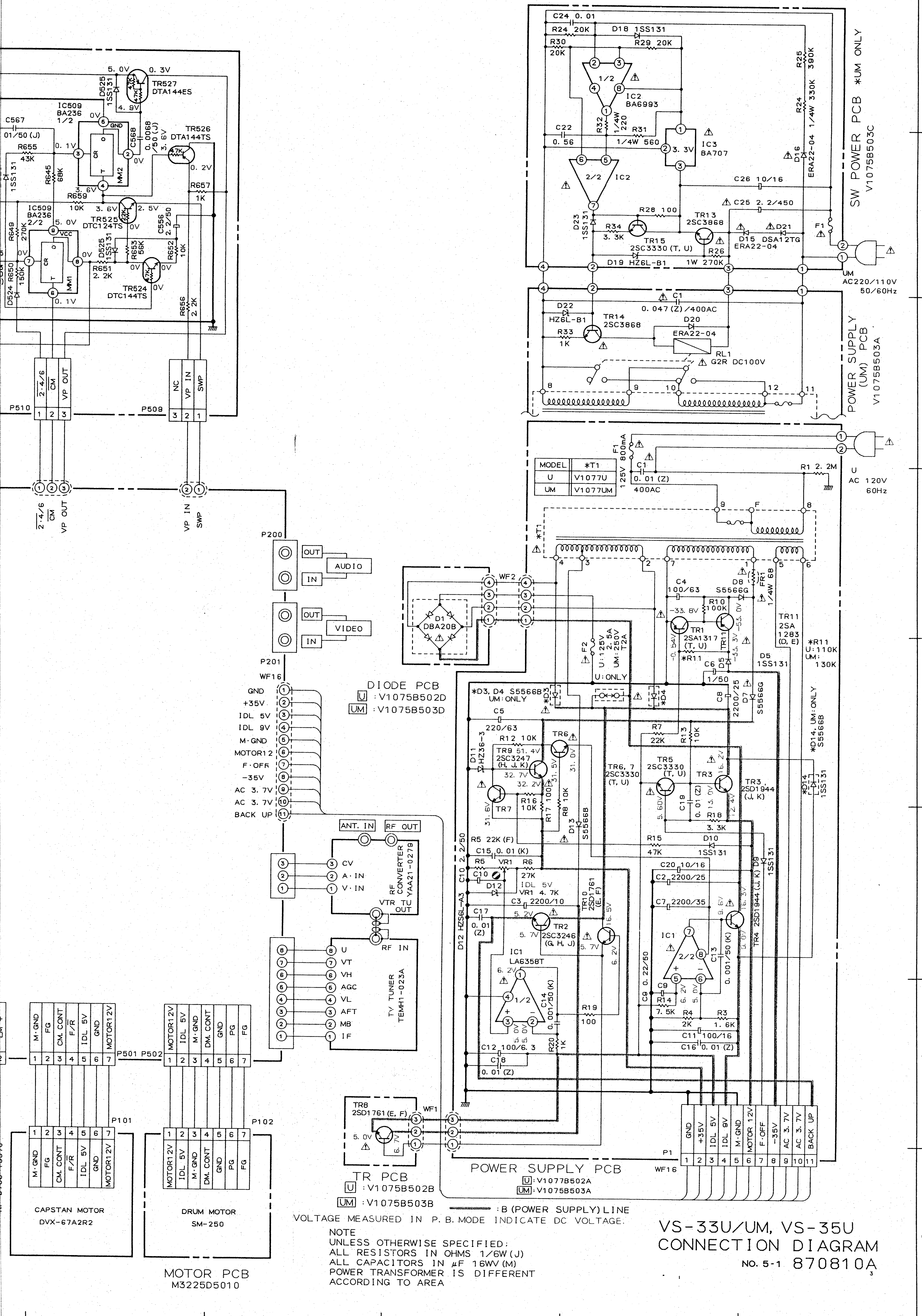
VS-33U/UM
VS-35U
VIDEO & AUDIO
BLOCK DIAGRAM
NO.4-4 870808A



WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL.
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

A B C D E F
1 2 3 4 5 6 7 8
PRESET PCB
1075A501E
KEY 1 KEY 2 KEY 3 KEY 4 KEY 5 KEY 6 LED AFC GND
OPERATION PCB
V1075A501D
CHROMA PCB
V1075A501B
SUB PCB
V1077C5030
MAIN PCB
VIDEO BLK
V1075A501A
AUDIO&PRE-AMP PCB
V1075A501C
WF15 CS S·CLK SI V·SYNC EDIT PICTURE
WF12 P·DOWN BU 5V AC 3.7V AC 3.7V −35V
WF14 SC SI/SO SO/SI S·RDY RESET IDL 5V GND
WF13 VT T·MUTE VH VL U TV/VIDEO AFT
WF11 A·MUTE CUE/REV SWP REC STILL EE
WF10 A·OUT A·IN GND REC FM 2·4·6 PB·Y IDL 9V REC S9 IDL 5V GND PB LC C·SWP
RESET IDL 5V NC GND PBL.C 4·2·6 PB 5V REC.C NC IDL 5V FSC NC GND PB.C NC C.SYNC C.SWP V.SYNC 2fSC GND EDIT EE.PB.V PICTURE V.OUT V.OUT V.IN
P511 NC GND IDL 5V
P508 DUP NC NC
P510
C567 0.01/50(J)
R655 43K
D526 1SS131
C565
R649 270K
R650 160K
D524 1SS131
P800
EP CH-2 EP CH-1 SP CH-1 SP CH-2
3 EP CH2− 1 EP CH2+ 2 EP CH1+ 4 EP CH1− 6 SP CH1− 8 SP CH1+ 7 SP CH2− 5 SP CH2+
VIDEO HEADS
P701 GND FE HEAD
P700 REC PB GND SE HEAD
P500 GND CTL
P504 IDL 5V START SE END SE LAMP GND
W504
P505 TRP REC SF LED
P506 GND ENCOD3 ENCOD2 ENCOD1 ENCOD4
P503 LM − LM +
M·GND
FULL ERASE HEAD
HVFM 0005B
GND REC TEST
R1 10
AUDIO R/P HEAD
SIDE ERASE HEAD
CTL HEAD
HVMLA10135
TR2 PN268 (R, S)
TR1 PN268 (R, S)
PL1
LOOM LAMP
REC SF
SW1
D1 LN59
PH1
ON2170 (Q, R)
MODE SELECTOR
D2ZQ-S2
M901
LOADING MOTOR
RF-370C 15370
FE HEAD PCB
V1075D511B
A/C HEAD PCB
V1075D511A
SENSOR (S) PCB
V1075D5140S
SENSOR (T) PCB
V1075D5140T
SENSOR PCB
V1075C5100


SW POWER PCB *UM ONLY
V1075B503C
POWER SUPPLY (UM) PCB
V1075B503A
UM AC220/110V 50/60Hz
U AC 120V 60Hz
IC2 BA6993
IC3 BA707
TR13 2SC3868
TR15 2SC3330 (T, U)
D15 DSA12TG
D21
D19 HZ6L-B1
D18 1SS131
D16 ERA22-04
D23 1SS131
F1
C1 0.047 (Z)/400AC
TR14 2SC3868
D20 ERA22-04
D22 HZ6L-B1
RL1 G2R DC100V
MODEL
*T1
U
V1077U
UM
V1077UM
F1 800mA 125V
C1 0.01 (Z) 400AC
R1 2.2M
*T1
DIODE PCB
U : V1075B502D
UM : V1075B503D
D1 DBA20B
WF2
TR1 2SA1317 (T, U)
TR11 2SA 1283 (D, E)
*R11 U: 110K UM: 130K
D5 1SS131
*D3, D4 S5566B UM: ONLY
TR9 2SC3247 (H, J, K)
TR7
TR6
TR6, 7 2SC3330 (T, U)
TR5 2SC3330 (T, U)
TR3 2SD1944 (J, K)
*D14, UM: ONLY S5566B
D13 S5566B
D11 HZ36-3
D12 HZ6L-A3
TR10 2SD1761 (E, F)
TR2 2SC3246 (G, H, J)
IC1 LA6358T
TR4 2SD1944 (J, K)
P1
WF16
GND
+35V
IDL 5V
IDL 9V
M·GND
MOTOR 12V
F·OFF
-35V
AC 3.7V
BACK UP
POWER SUPPLY PCB
U : V1077B502A
UM : V1075B503A
TR PCB
U : V1075B502B
UM : V1075B503B
TR8 2SD1761 (E, F)
WF1
P200
AUDIO
VIDEO
OUT
IN
P201
ANT. IN
RF OUT
RF CONVERTER YAA21-0279
CV
A·IN
V·IN
VTR TC OUT
RF IN
TV TUNER TEMH1-023A
U
VT
VH
AGC
VL
AFT
MB
IF
P501
P502
P101
P102
M·GND
FG
CM. CONT
F/R
IDL 5V
GND
MOTOR12V
DM. CONT
PG
CAPSTAN MOTOR DVX-67A2R2
DRUM MOTOR SM-250
MOTOR PCB M3225D5010
IC509 BA236 1/2
IC509 BA236 2/2
TR527 DTA144ES
TR526 DTA144TS
TR525 DTC124TS
TR524 DTC144TS
P510
2·4/6
CM
VP OUT
P509
NC
VP IN
SWP
G
H
I
J
K
1
2
3
4
5
6
7
8

━━━━ : B (POWER SUPPLY) LINE

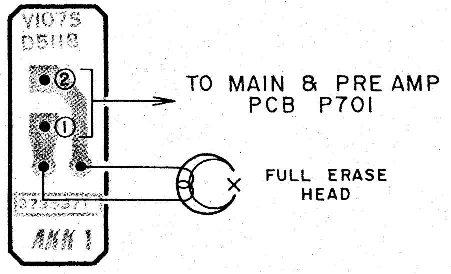
VOLTAGE MEASURED IN P. B. MODE INDICATE DC VOLTAGE.

NOTE
UNLESS OTHERWISE SPECIFIED:
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 16WV (M)
POWER TRANSFORMER IS DIFFERENT
ACCORDING TO AREA

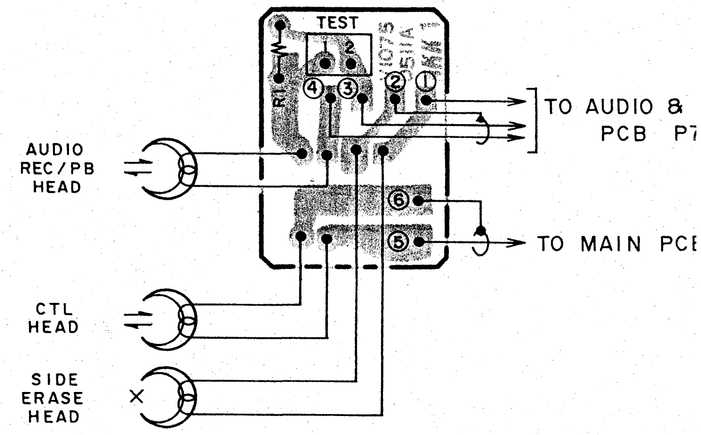
# VS-33U/UM, VS-35U
# CONNECTION DIAGRAM

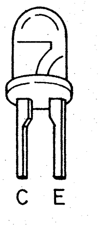
NO. 5-1 870810A

FULL ERASE HEAD PCB
V1075D511B

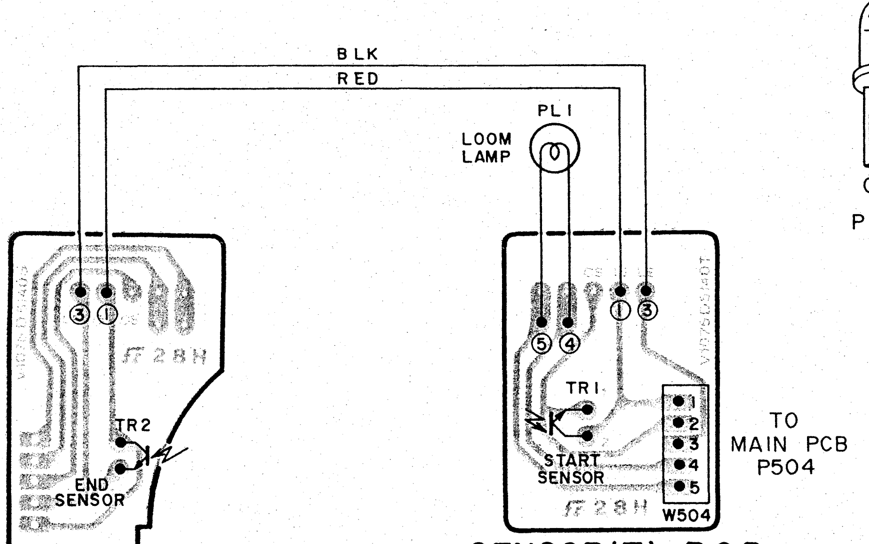

V1075
D511B
②
①
TO MAIN & PRE AMP PCB P701
FULL ERASE HEAD
AKK 1

A/C HEAD PCB
V1075D511A


TEST
1
2
4
3
2
1
V1075 511A
AKK 1
R1
6
5
AUDIO REC/PB HEAD
TO AUDIO &
PCB P7
TO MAIN PC
CTL HEAD
SIDE ERASE HEAD



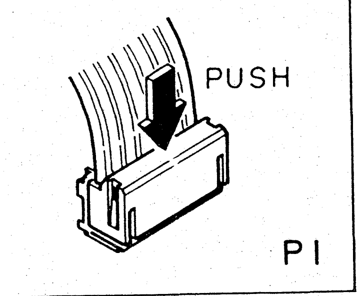
PN268


BLK
RED
PL1
LOOM LAMP
3
1
TR2
END SENSOR
28H
5
4
1
3
TR1
START SENSOR
1
2
3
4
5
W504
TO MAIN PCB P504

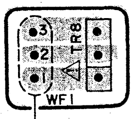
SENSOR(S) PCB
V1075D5140S

SENSOR(T) PCB
V1075D5140T

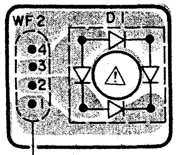
DISCONNECT THE WIRE

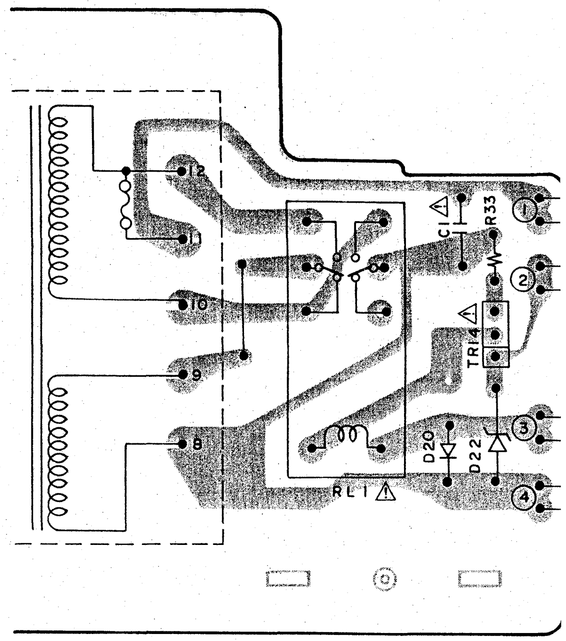


TR PCB
V1075B502B

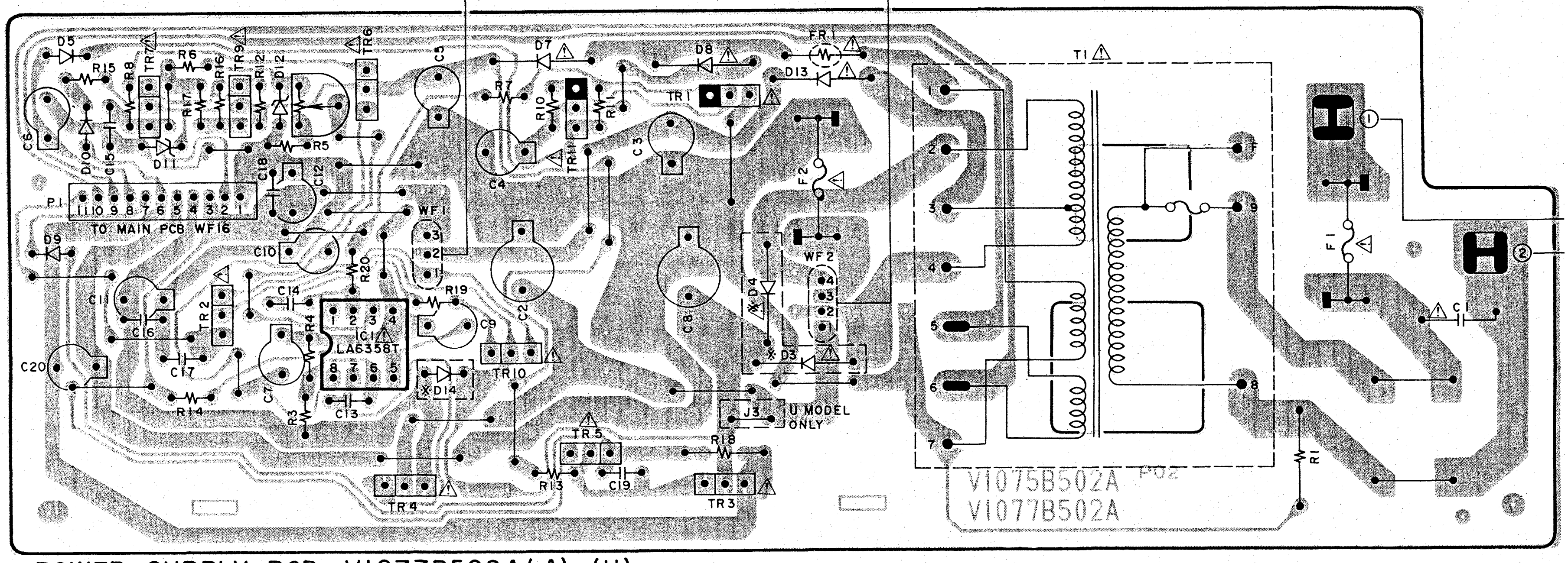


DIODE PCB
V1075B502D




12
11
10
9
8
C1
R33
1
2
3
4
TR14
D20
D22
RL1

POWER SUPPLY(UM) PCB
V1075B503A


D5
R15
R8
TR7
R6
R16
TR9
R12
D12
TR6
C5
D7
D8
FR1
D13
T1
C6
D10
C15
R17
D11
R5
R7
R10
R11
TR1
TR11
C3
C4
C18
C12
P1
11 10 9 8 7 6 5 4 3 2 1
TO MAIN PCB WF16
WF1
D9
C10
R20
R19
C14
C11
C16
R2
R4
IC1
LA6358T
C9
C2
C8
F2
D4
WF2
D3
C17
C20
R14
C7
R3
C13
D14
TR10
J3
U MODEL ONLY
TR5
R18
R13
C19
TR4
TR3
V1075B502A P02
V1077B502A
F1
C1
R1
1
2

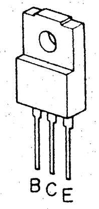
POWER SUPPLY PCB V1077B502A(-A)--(U) ※D3, D4, D14 UM ONLY
V1075B503A -----(UM)

[●●●] = NPN TRANSISTOR

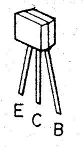
[■●●] = PNP TRANSISTOR

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

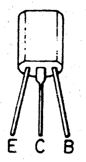
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT



2SD1761
2SD1944



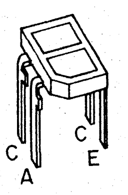
2SA1317
2SC3330



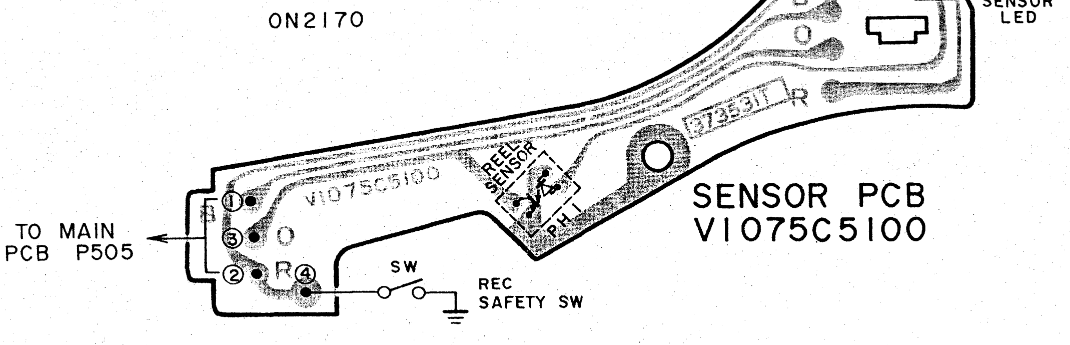
2SA1283
2SC3247

TO AUDIO & PRE AMP
PCB P700

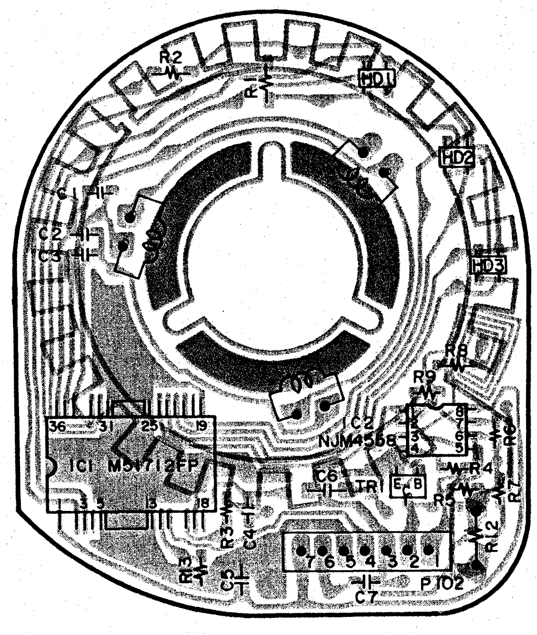
TO MAIN PCB P500



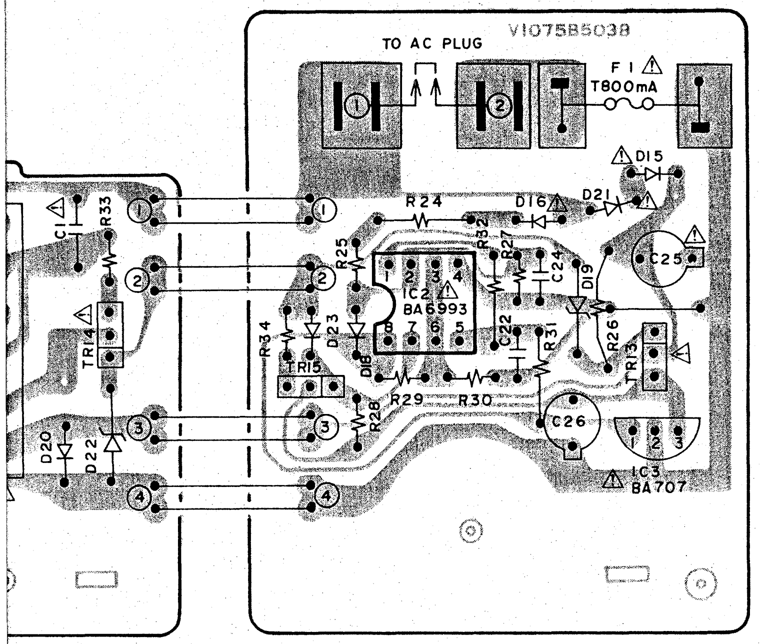
ON2170


D1
SENSOR LED
B
O
R
REEL SENSOR
PH1
V1075C5100
TO MAIN PCB P505
B
O
R
SW
REC SAFETY SW

SENSOR PCB
V1075C5100

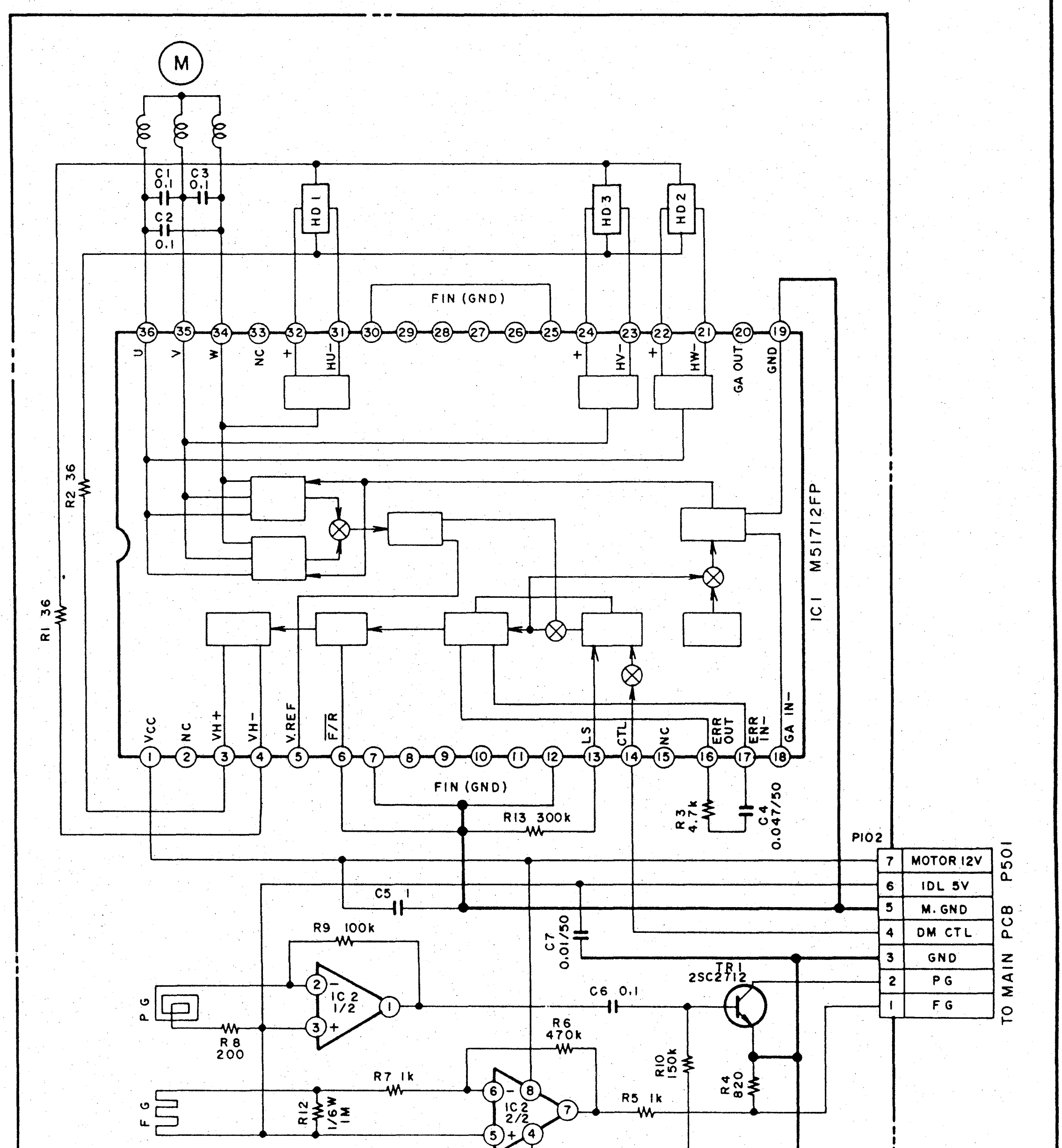

R2
HD1
HD2
HD3
C1
C2
C3
R8
R9
IC2 NJM4558
IC1 M51712FP
36
31
25
19
1
5
13
18
C6
TR1
R4
R5
R6
R7
R12
R13
R3
C4
C5
C7
P102
7 6 5 4 3 2 1

MOTOR PCB M3225D5010(SM-250)


V1075B5038
TO AC PLUG
F1
T800mA
D15
D16
D21
R24
R33
C1
R25
IC2
BA6993
R32
R27
C24
D19
C25
R34
D23
TR14
TR15
C22
R31
R26
TR13
R29
R30
R28
C26
IC3
BA707
D20
D22
1
2
3
4

B

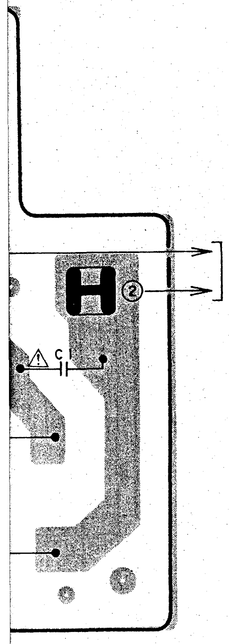
SW POWER PCB
V1075B503C

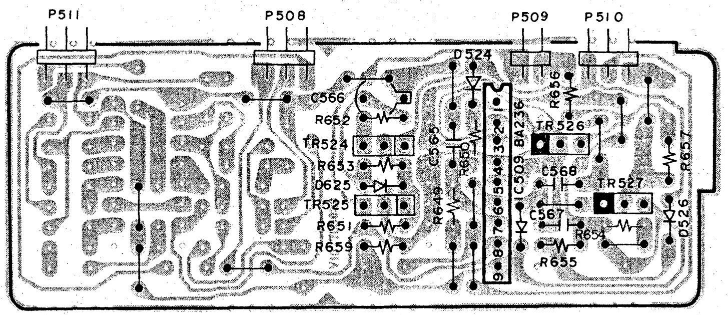

M
U
V
W
C1 0.1
C3 0.1
C2 0.1
HD1
HD3
HD2
FIN (GND)
NC
HU-
HV-
HW-
GA OUT
GND
R2 36
R1 36
IC1 M51712FP
VCC
NC
VH+
VH-
V.REF
F/R
LS
CTL
NC
ERR OUT
ERR IN
GA IN-
FIN (GND)
R13 300k
R3 4.7k
C4 0.047/50
P102
7 MOTOR 12V
6 IDL 5V
5 M.GND
4 DM CTL
3 GND
2 PG
1 FG
TO MAIN PCB P501
C5 1
C7 0.01/50
R9 100k
PG
IC2 1/2
R8 200
C6 0.1
TR1 2SC2712
R6 470k
R10 150k
R4 820
FG
R7 1k
R12 1/6W 1M
IC2 2/2
R5 1k
IC2 NJM4558MB T2
TR1 2SC2712 (B,L)

MOTOR PCB M3225D5010

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/4W(J)
ALL CAPACITORS IN μF 16 WV(J)

VS-33U/UM, VS-35U MOTOR
SCHEMATIC DIAGRAM
NO. 5-2 870606A

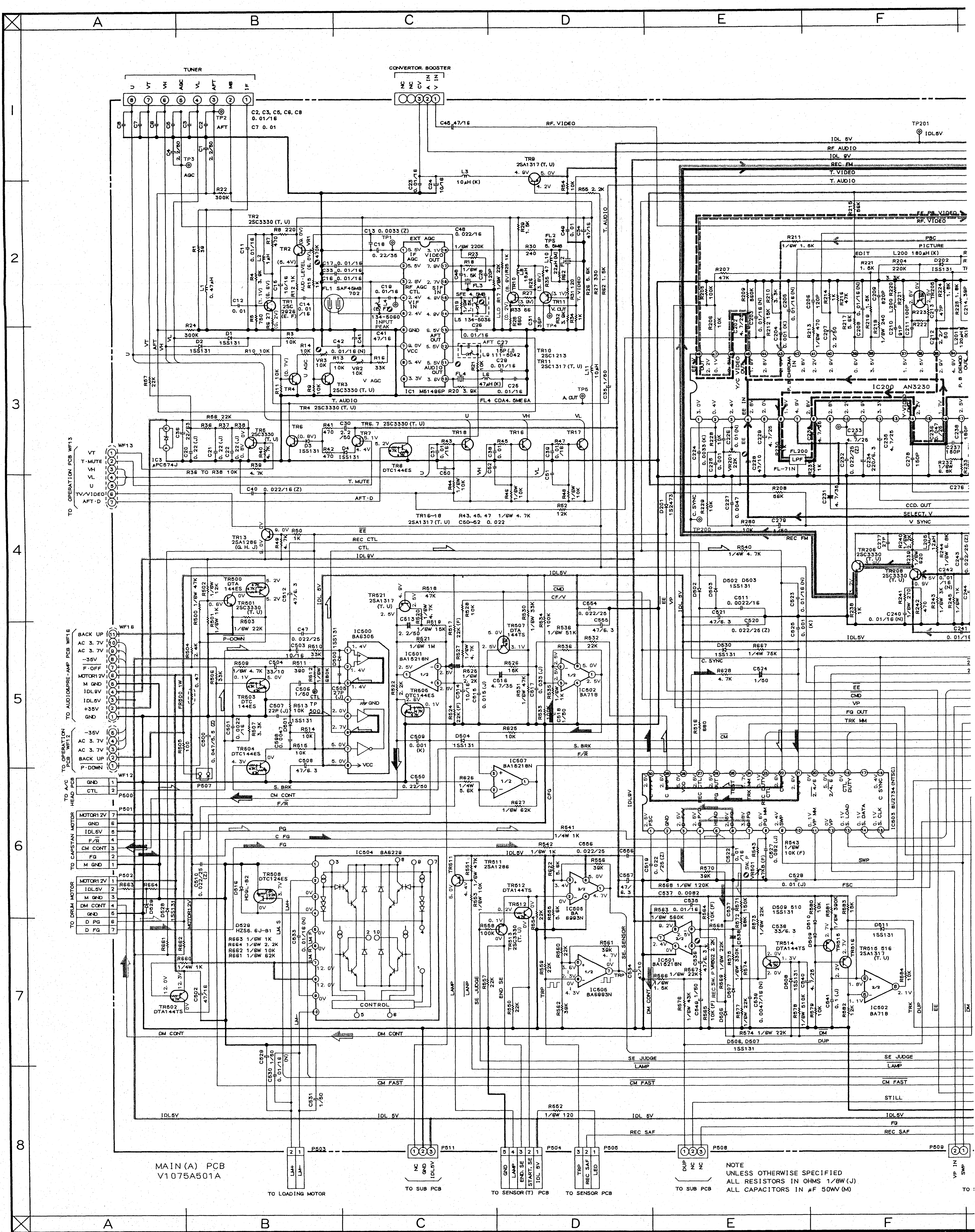

TO AC PLUG
H
2
C1


P511
P508
P509
P510
D524
C566
R652
TR524
R653
D625
TR525
R651
R659
C564
R649
R650
IC509 BA236
R656
TR526
C568
C567
TR527
R654
R655
R657
D526

SUB PCB V1077C5030

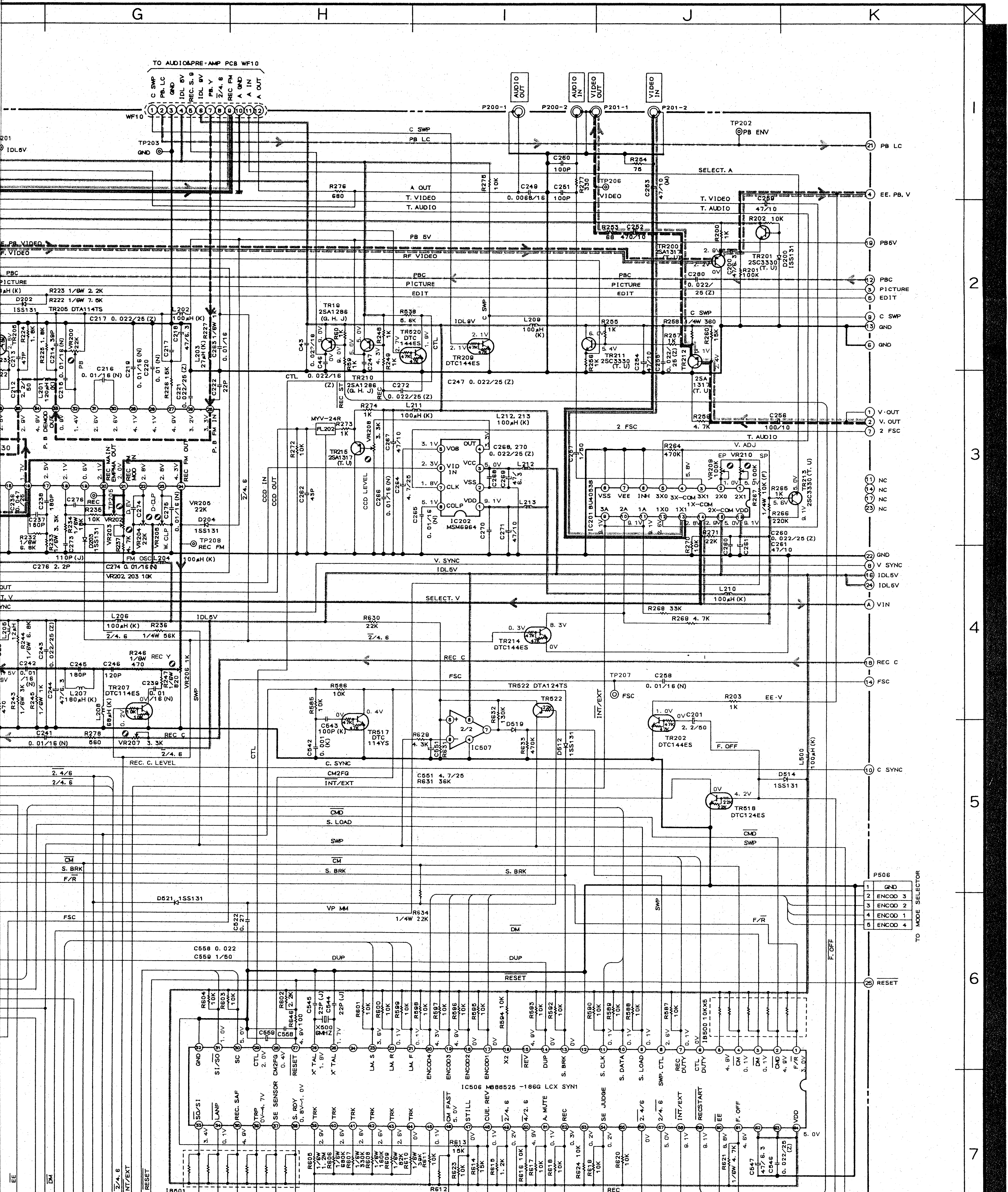
NTINUED SAFETY,
MANUFACTURER'S

SÉCURITÉ.
EIL.
R LE FABRICANT


TUNER
CONVERTOR. BOOSTER
TO OPERATION PCB WF13
TO AUDIO&PRE-AMP PCB WF16
TO OPERATION PCB WF12
TO A/C HEAD PCB
TO CAPSTAN MOTOR
TO DRUM MOTOR
TO LOADING MOTOR
TO SUB PCB
TO SENSOR (T) PCB
TO SENSOR PCB
TO SUB PCB
IC1 M51496P
IC200 AN3230
IC500 BA6306
IC504 BA6229
IC503 BU2734 (NTSC)
IC601 BA15218N
IC502 BA718
IC507 BA15218N
IC606 BA6993N
CONTROL

MAIN (A) PCB
V1075A501A

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN μF 50WV (M)



G
H
I
J
K
1
2
3
4
5
6
7
8
TO AUDIO&PRE-AMP PCB WF10
WF10
C SWP
PB LC
GND
IDL 5V
REC. S. 9
IDL 9V
PB. Y
2/4. 6
REC FM
A GND
A IN
A OUT
AUDIO OUT
AUDIO IN
VIDEO OUT
VIDEO IN
P200-1
P200-2
P201-1
P201-2
TP202
PB ENV
TP203
GND
PB LC
EE. PB. V
PB5V
PBC
PICTURE
EDIT
C SWP
GND
V-OUT
V. OUT
2 FSC
NC
GND
V SYNC
IDL5V
IDL6V
VIN
REC C
FSC
C SYNC
P506
GND
ENCOD 3
ENCOD 2
ENCOD 1
ENCOD 4
TO MODE SELECTOR
RESET
4/2·6
IC202 MSM6984
IC201 BU4053B
IC507
IC508 MB88525 -186G LCX SYN1
TR19 2SA1286
TR520 DTC144ES
TR209 DTC144ES
TR210 2SA1286
TR211 2SC3330
TR212 2SA1317
TR200 2SA1317
TR201 2SC3330
TR213 2SC3330
TR214 DTC144ES
TR215 2SA1317
TR517 DTC114YS
TR522 DTA124TS
TR202 DTC144ES
TR518 DTC124ES
TR205 DTA114TS
TR207 DTC114ES
VR206 22K
VR207 3.3K
VR209 100K
VR210 100K
X500 8MHZ
P509
VP IN
SWP
TO SUB PCB
P510
VP OUT
CM
2/4/6
WF14
GND
IDL5V
RESET
SO/SI
SI/SO
SC
TO OPERATION PCB WF14
WF11
EE
STILL
REC
SWP
CUE. REV
A-MUTE
TO AUDIO&PRE-AMP PCB WF11

:B (POWER SUPPLY) LINE
:Y. REC
:Y. P. B.
:CHROMA REC
:CHROMA PB
SIGNAL LINE
:DM PHASE
:DM SPEED
:CM PHASE
:CM SPEED
SIGNAL LINE

# VS-33U/UM, VS-35U
# MAIN
# SCHEMATIC DIAGRAM

NO. 5-3 870811A

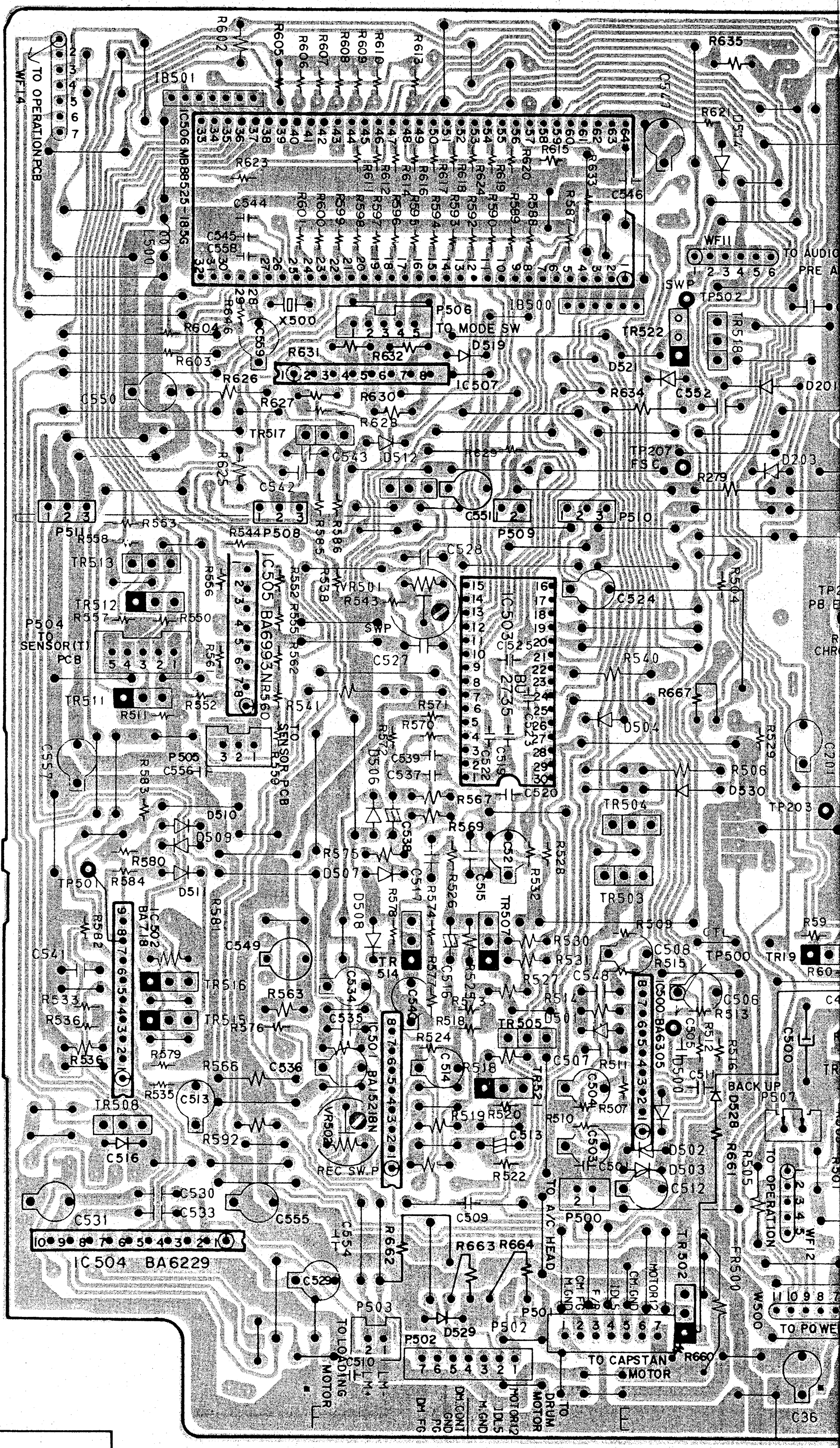
## PRINCIPAL PARTS LOCATION

ICs
IC1.....BC6
IC3.....BC6
IC200...B3,4
IC201...A3,4
IC202...D3
IC500...E5,6
IC501...F5,6
IC502...F5
IC503...E4
IC504...F6
IC505...F4
IC506...EF2,3
IC506...EF2,3
IC507...F3

CONNECTORs, WIREs
P500....E6
P501....E6
P502....EF6
P503....F6
P504....F4
P505....F4
P506....F3
P507....D6
P508....E4
P509....E4
P510....E4
P511....F4
WF10....D5
WF11....E3
WF12....D6
WF13....CD6
WF14....F2
W16.....D6

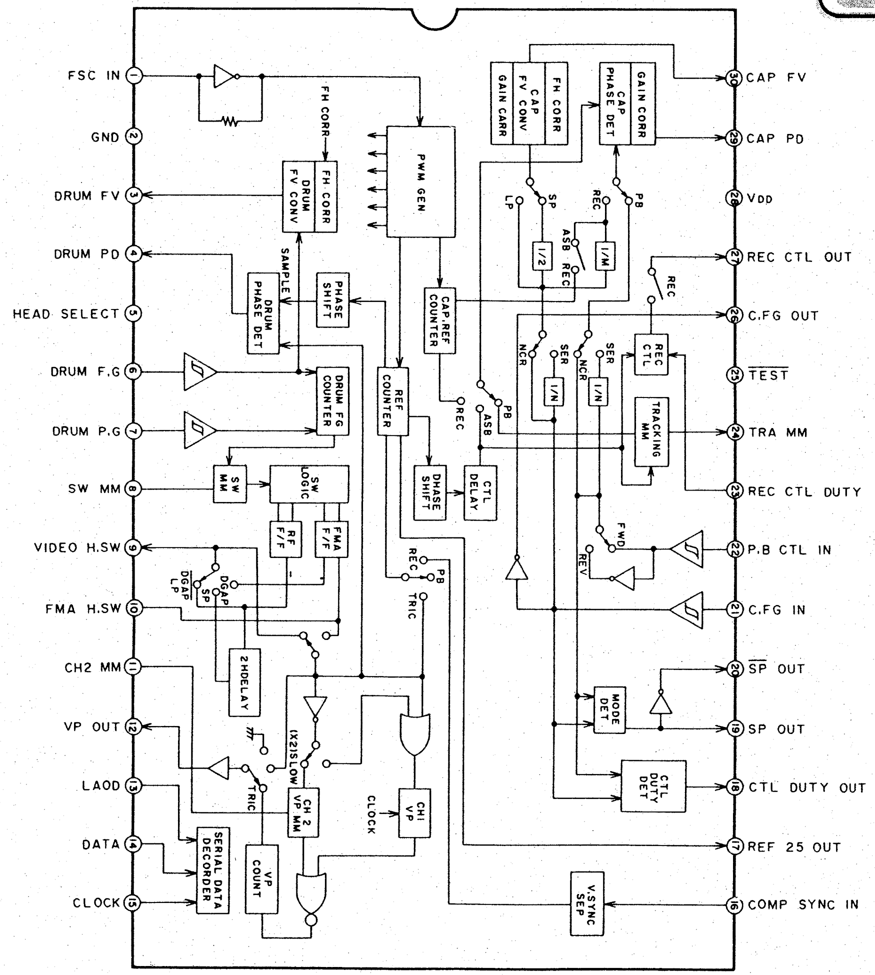
TRANSISTORs
TR1.....B5
TR2.....C5
TR3.....B6
TR4.....B6
TR5.....B6
TR6.....C6
TR7.....C6
TR8.....C6
TR9.....A6
TR10....C5
TR11....C5
TR13....D5
TR16....C6
TR17....C6
TR18....D6
TR19....D5

TR200...B4
TR201...B4
TR202...B4
TR205...B3
TR206...D4
TR207...D4
TR208...D4
TR209...D2
TR210...D2
TR211...A3
TR212...A2
TR213...A4
TR214...B4
TR215...C3
TR500...D6
TR501...D6
TR502...E6
TR503...E5
TR504...E5
TR505...E5
TR507...F4
TR508...F6
TR511...F4
TR512...F4
TR513...F4
TR514...F5
TR515...F5
TR516...F5
TR517...F3
TR518...E3
TR520...E5
TR521...E5,6
TR522...E3

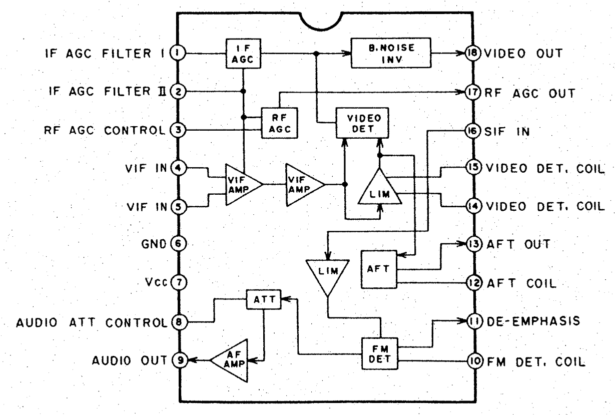

TO OPERATION PCB
WF14
IC506 MB88525-185G
X500
TO MODE SW
IC507
P511
P508
P509
P510
P504 TO SENSOR(T) PCB
IC505 BA6993N
IC503 BU2735
P505
TO SENSOR(R) PCB
IC502 BA718
IC501 BA6218N
IC500 BA6305
BACK UP
P501
TO OPERATION
REC SW.P
P500
IC504 BA6229
P503
TO LOADING MOTOR
P502
TO DRUM MOTOR
TO CAPSTAN MOTOR
TO POWER
TO AUDIO PRE AMP
SWP
FSC
WF11

MAIN P.C.B V1075A501A

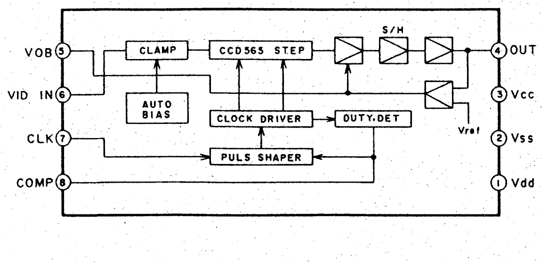
### BU2734 (DIGITAL SERVO)

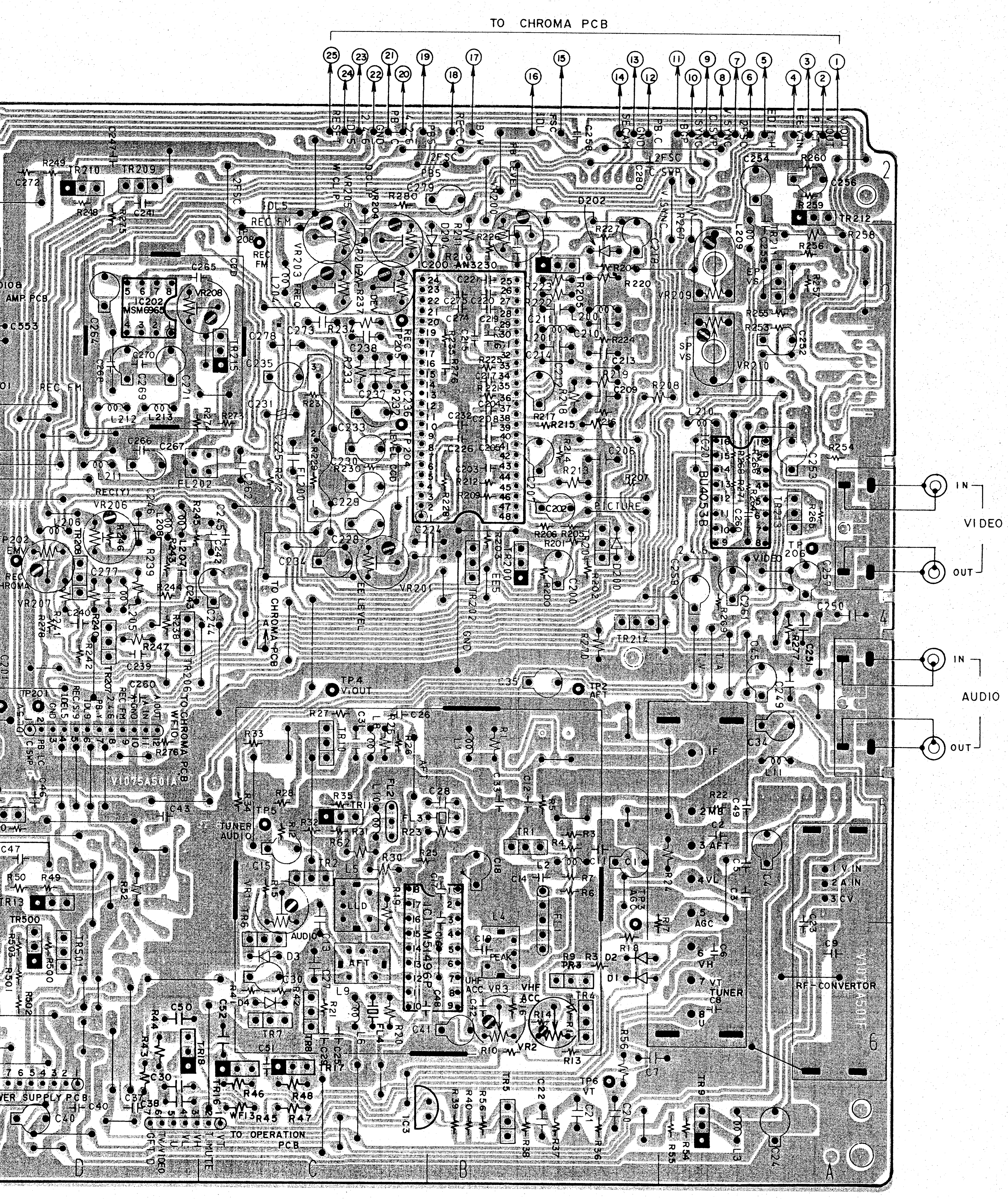

FSC IN 1
GND 2
DRUM FV 3
DRUM PD 4
HEAD SELECT 5
DRUM F.G 6
DRUM P.G 7
SW MM 8
VIDEO H.SW 9
FMA H.SW 10
CH2 MM 11
VP OUT 12
LAOD 13
DATA 14
CLOCK 15
COMP SYNC IN 16
REF 25 OUT 17
CTL DUTY OUT 18
SP OUT 19
SP OUT 20
C.FG IN 21
P.B CTL IN 22
REC CTL DUTY 23
TRA MM 24
TEST 25
C.FG OUT 26
REC CTL OUT 27
VDD 28
CAP PD 29
CAP FV 30
FH CORR
DRUM FV CONV
PWM GEN
CAP FV CONV
GAIN CARR
CAP PHASE DET
GAIN CORR
DRUM PHASE DET
SAMPLE
PHASE SHIFT
CAP.REF COUNTER
REF COUNTER
DRUM FG COUNTER
REC CTL
TRACKING MM
SW MM
SW LOGIC
DHASE SHIFT
CTL DELAY
RF F/F
FMA F/F
2HDELAY
MODE DET
CTL DUTY DET
CH 2 VP MM
CH1 VP
VP COUNT
SERIAL DATA DECORDER
V.SYNC SEP
1/2
1/M
1/N
LP
SP
REC
PB
ASB
NCR
SER
FWD
REV
DGAP LP
DGAP SP
TRIC
(X2)SLOW
CLOCK

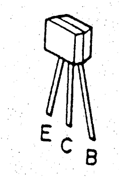
### M51496P (VIF+SIF AMP IC)


IF AGC FILTER I 1
IF AGC FILTER II 2
RF AGC CONTROL 3
VIF IN 4
VIF IN 5
GND 6
Vcc 7
AUDIO ATT CONTROL 8
AUDIO OUT 9
FM DET. COIL 10
DE-EMPHASIS 11
AFT COIL 12
AFT OUT 13
VIDEO DET. COIL 14
VIDEO DET. COIL 15
SIF IN 16
RF AGC OUT 17
VIDEO OUT 18
IF AGC
B.NOISE INV
RF AGC
VIDEO DET
VIF AMP
VIF AMP
LIM
LIM
AFT
ATT
AF AMP
FM DET

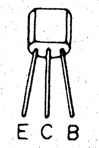
### MSM6964-3RS (IH CCD DELAY LINE)


VOB 5
VID IN 6
CLK 7
COMP 8
4 OUT
3 Vcc
2 Vss
1 Vdd
CLAMP
CCD565 STEP
S/H
AUTO BIAS
CLOCK DRIVER
DUTY.DET
PULS SHAPER
Vref

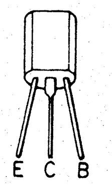

TO CHROMA PCB
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
IC200 AN3230
BU4053B
IC1 M51496P
TO CHROMA PCB
TO OPERATION PCB
POWER SUPPLY PCB
TUNER AUDIO
IF
RF-CONVERTOR
VIDEO
IN
OUT
AUDIO
IN
OUT
A
B
C
D



2SA1317
2SC1317
2SC2926
2SC3330
DTA114TS
DTA144ES
DTA144TS
DTC114ES
DTC114YS
DTC124ES
DTC144ES



2SC1213



2SA1286

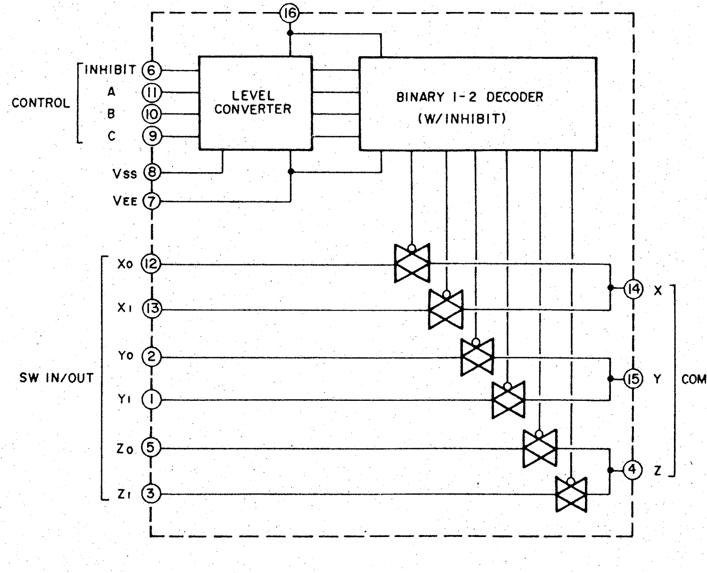
[•••] = NPN TRANSISTOR

[■••] = PNP TRANSISTOR

WARNING: ⚠INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY,
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

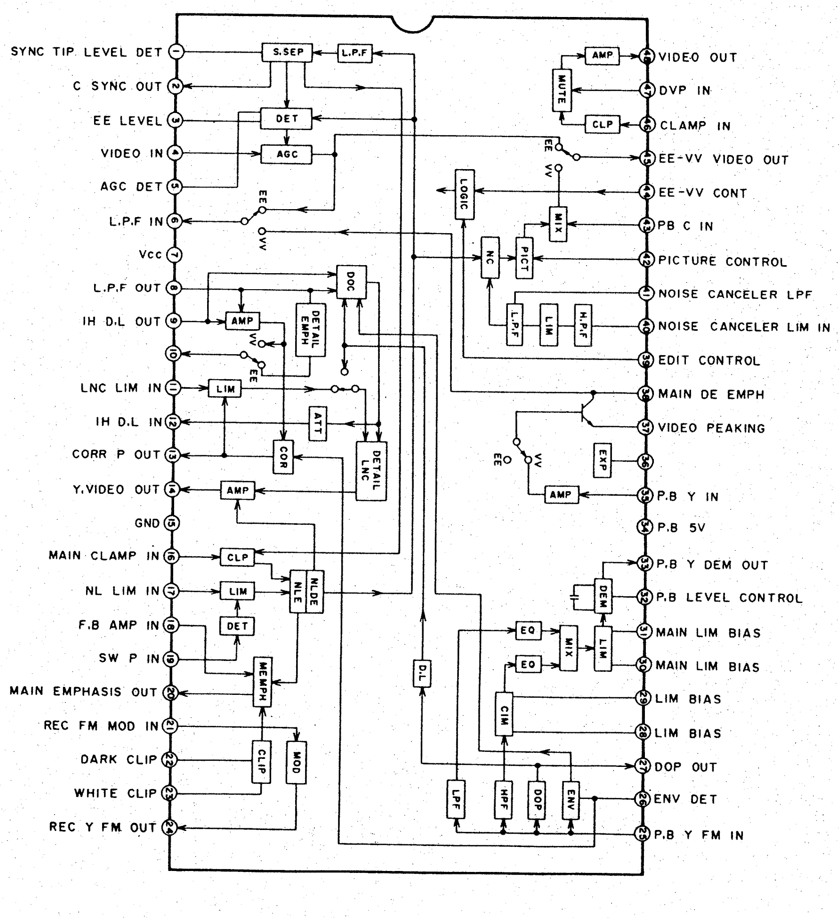
## BU4053B (TRIPLE 2CH. MULTIPLEXER/DEMULTIPLEXER)

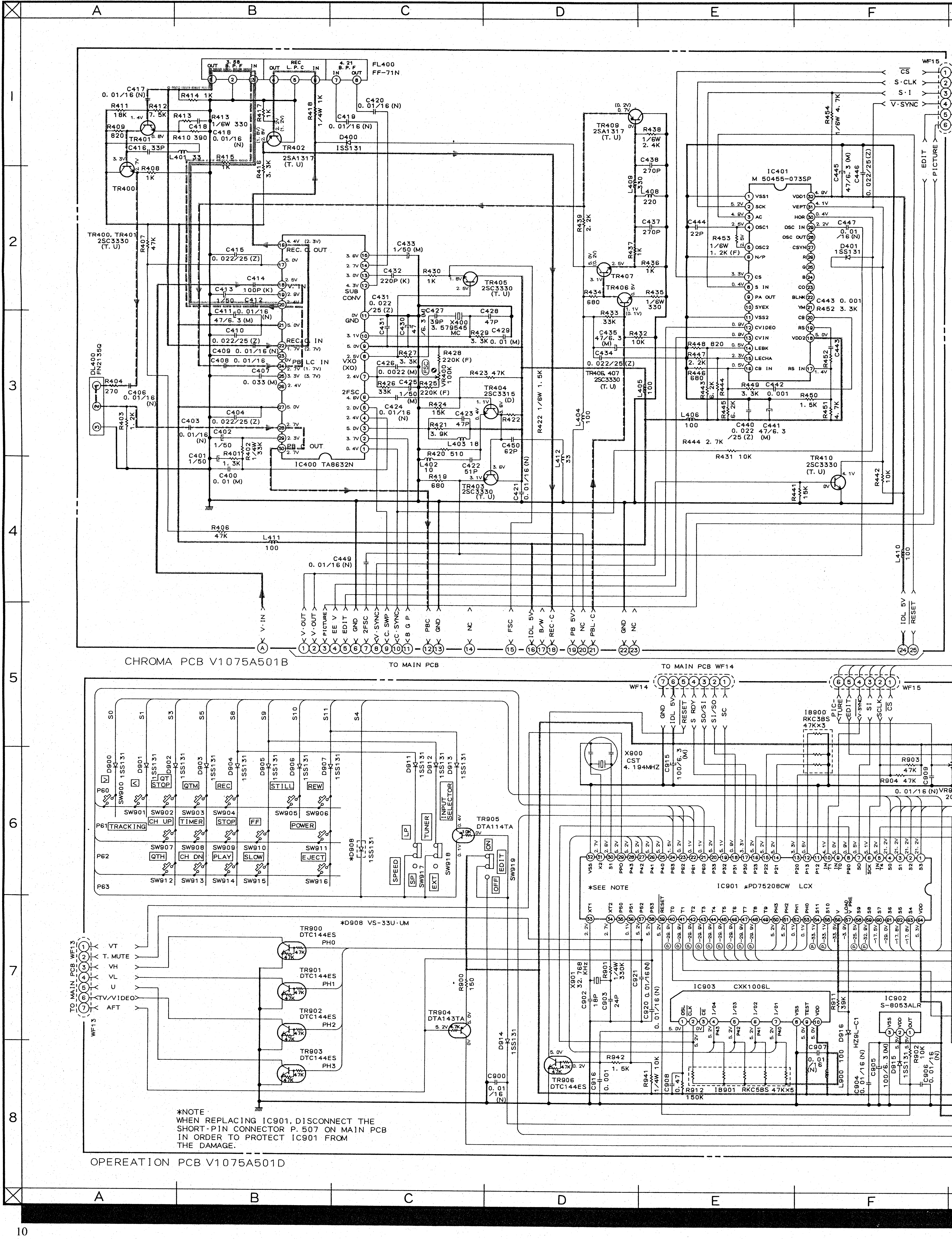

VDD
16
CONTROL
INHIBIT 6
A 11
B 10
C 9
LEVEL CONVERTER
BINARY 1-2 DECODER (W/INHIBIT)
Vss 8
VEE 7
SW IN/OUT
X0 12
X1 13
Y0 2
Y1 1
Z0 5
Z1 3
14 X
15 Y
4 Z
COMMONS OUT/IN

**TRUTH TABLE**

| CONTROL DATE | | | | "ON" CHANNEL | | |
|---|---|---|---|---|---|---|
| INH | A | B | C | X | Y | Z |
| L | L | L | L | $X_0$ | $Y_0$ | $Z_0$ |
| L | L | L | H | $X_0$ | $Y_0$ | $Z_1$ |
| L | L | H | L | $X_0$ | $Y_1$ | $Z_0$ |
| L | L | H | H | $X_0$ | $Y_1$ | $Z_1$ |
| L | H | L | L | $X_1$ | $Y_0$ | $Z_0$ |
| L | H | L | H | $X_1$ | $Y_0$ | $Z_1$ |
| L | H | H | L | $X_1$ | $Y_1$ | $Z_0$ |
| L | H | H | H | $X_1$ | $Y_1$ | $Z_1$ |
| H | * | * | * | NONE | NONE | NONE |

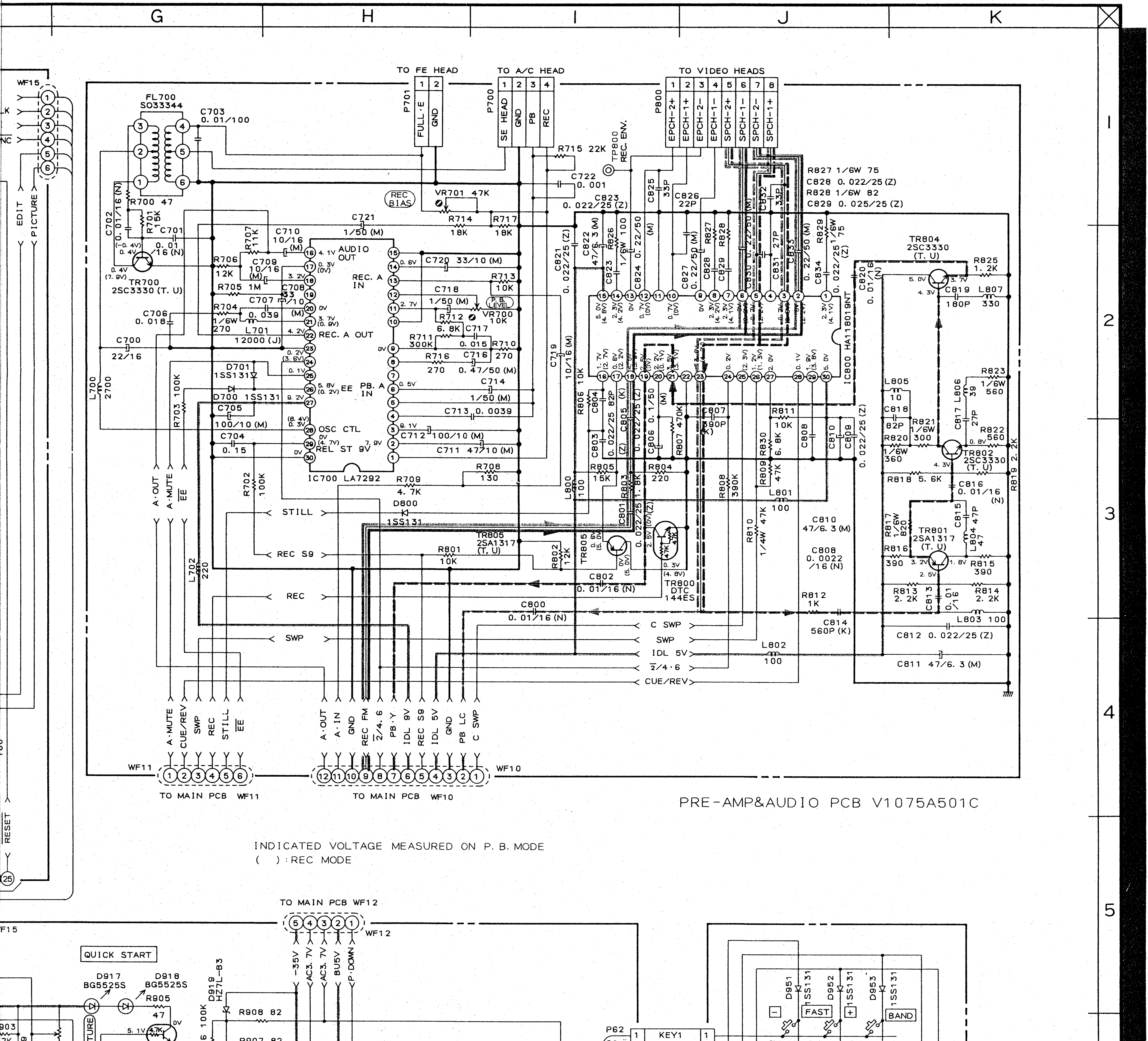
## AN3230 (VIDEO Y SIGNAL PROCESSING IC)


SYNC TIP LEVEL DET
C SYNC OUT
EE LEVEL
VIDEO IN
AGC DET
L.P.F IN
Vcc
L.P.F OUT
IH D.L OUT
LNC LIM IN
IH D.L IN
CORR P OUT
Y.VIDEO OUT
GND
MAIN CLAMP IN
NL LIM IN
F.B AMP IN
SW P IN
MAIN EMPHASIS OUT
REC FM MOD IN
DARK CLIP
WHITE CLIP
REC Y FM OUT
VIDEO OUT
DVP IN
CLAMP IN
EE-VV VIDEO OUT
EE-VV CONT
PB C IN
PICTURE CONTROL
NOISE CANCELER LPF
NOISE CANCELER LIM IN
EDIT CONTROL
MAIN DE EMPH
VIDEO PEAKING
P.B Y IN
P.B 5V
P.B Y DEM OUT
P.B LEVEL CONTROL
MAIN LIM BIAS
MAIN LIM BIAS
LIM BIAS
LIM BIAS
DOP OUT
ENV DET
P.B Y FM IN
S.SEP
L.P.F
AMP
MUTE
CLP
DET
AGC
EE
VV
LOGIC
NC
PICT
MIX
DOC
DETAIL EMPH
L.P.F
LIM
H.P.F
ATT
COR
DETAIL LNC
EXP
NLDE
NLE
MEMPH
CLIP
MOD
D.L
CIM
EQ
DEM
LPF
HPF
DOP
ENV


A
B
C
D
E
F
1
2
3
4
5
6
7
8
3.58 B.P.F
REC L.P.C
4.21 B.P.F
FL400 FF-71N
C417 0.01/16(N)
R411 18K
R412 7.5K
R414 1K
R413 1/6W 330
R409 820
TR401
TR400
TR402 2SA1317 (T.U)
TR400, TR401 2SC3330 (T.U)
D400 1SS131
C420 0.01/16(N)
C419 0.01/16(N)
IC400 TA8632N
REC. C OUT
V. IN
REC. C IN
PB LC IN
PB C OUT
SUB CONV
GND
VXO (XO)
2FSC
X400 3.579545 MC
VR400 100K
TR405 2SC3330 (T.U)
TR404 2SC3315 (D)
TR403 2SC3330 (T.U)
TR409 2SA1317 (T.U)
TR407
TR406
TR406, 407 2SC3330 (T.U)
IC401 M 50455-073SP
VSS1
SCK
AC
OSC1
OSC2
N/P
CS
S IN
PA OUT
SYEX
VSS2
CVIDEO
CVIN
LEBK
LECHA
CB IN
VDD1
VEPT
HOR
OSC IN
OSC OUT
CSYN
BLNK
YM
CB
RS
VDD2
RS IN
D401 1SS131
TR410 2SC3330 (T.U)
DL400 FN2135Q
WF15
CS
S·CLK
S·I
V·SYNC
EDIT
PICTURE
V·IN
V·OUT
V·OUT
PICTURE
EE V
EDIT
GND
2FSC
V·SYNC
C·SWP
C·SYNC
C B G P
PBC
GND
NC
FSC
IDL 5V
B/W
REC·C
PB 5V
NC
PBL·C
GND
NC
IDL 5V
RESET
TO MAIN PCB
CHROMA PCB V1075A501B
TO MAIN PCB WF14
WF14
GND
IDL 5V
RESET
S RDY
SO/SI
SI/SO
SC
WF15
PICTURE
EDIT
V·SYNC
SI
SCLK
CS
IB900 RKC3BS 47K×3
X900 CST 4.194MHZ
S0
S1
S3
S5
S8
S9
S10
S11
S4
P60
P61
P62
P63
SW900
SW901
SW902
SW903
SW904
SW905
SW906
SW907
SW908
SW909
SW910
SW911
SW912
SW913
SW914
SW915
SW916
SW917
SW918
SW919
STOP
QTM
REC
STILL
REW
TRACKING
CH UP
TIMER
STOP
FF
POWER
QTH
CH DN
PLAY
SLOW
EJECT
LP
SPEED
SP
EXT
TUNER
INPUT SELECTOR
ON
EDIT
OFF
TR905 DTA114TA
*D908 VS-33U·UM
IC901 μPD75208CW LCX
*SEE NOTE
IC903 CXK1006L
IC902 S-8053ALR
X901 32.768 KHz
TR900 DTC144ES PH0
TR901 DTC144ES PH1
TR902 DTC144ES PH2
TR903 DTC144ES PH3
TR904 DTA143TA
TR906 DTC144ES
IB901 RKC5BS 47K×5
TO MAIN PCB WF13
WF13
VT
T. MUTE
VH
VL
U
TV/VIDEO
AFT

*NOTE
WHEN REPLACING IC901, DISCONNECT THE SHORT-PIN CONNECTOR P.507 ON MAIN PCB IN ORDER TO PROTECT IC901 FROM THE DAMAGE.

OPEREATION PCB V1075A501D


G
H
I
J
K
1
2
3
4
5
6
7
8
TO FE HEAD
TO A/C HEAD
TO VIDEO HEADS
P701
FULL·E
GND
P700
SE HEAD
GND
PB
REC
P800
EPCH-2+
EPCH-1+
EPCH-2-
EPCH-1-
SPCH-2+
SPCH-1-
SPCH-2-
SPCH-1+
FL700 SO33344
C703 0. 01/100
R715 22K
TP800 REC ENV.
C722 0. 001
REC BIAS
VR701 47K
R714 18K
R717 18K
C823 0. 022/25 (Z)
C825 33P
C826 22P
R827 1/6W 75
C828 0. 022/25 (Z)
R828 1/6W 82
C829 0. 025/25 (Z)
R829 1/6W 75
TR804 2SC3330 (T. U)
R825 1. 2K
L807 330
C819 180P
C702 0. 01/16 (N)
R700 47
R701 15K
C701 0. 01/16 (N)
C721 1/50 (M)
C710 10/16 (M)
AUDIO OUT
REC. A IN
C720 33/10 (M)
R713 10K
C718 1/50 (M)
R712 6. 8K
VR700 10K
P.B. LEVEL
C717 0. 015
R710 270
R711 300K
R716 270
C716 0. 47/50 (M)
C714 1/50 (M)
C713 0. 0039
C712 100/10 (M)
C711 47/10 (M)
R708 130
R709 4. 7K
IC700 LA7292
REC. A OUT
PB. A IN
OSC CTL
REL ST 9V
EE
TR700 2SC3330 (T. U)
R706 12K
R705 1M
C709 10/16 (M)
R707 11K
C708 33/10
R704 1/6W 270
C707 0. 039
L701 12000 (J)
C706 0. 018
C700 22/16
L700 2700
D701 1SS131
D700 1SS131
C705 100/10 (M)
C704 0. 15
R703 100K
R702 100K
A·OUT
A·MUTE
EE
STILL
REC S9
REC
SWP
L702 220
D800 1SS131
TR805 2SA1317 (T. U)
R801 10K
R802 1. 2K
C802 0. 01/16 (N)
C800 0. 01/16 (N)
TR800 DTC 144ES
C821 0. 022/25 (Z)
C822 47/6. 3 (M)
R826 1/6W 100
C824 0. 22/50 (M)
C827 0. 22/50 (M)
C830 0. 22/50 (M)
C831 27P
C832 33P
C833
C834 0. 022/25 (Z)
C820 0. 01/16 (N)
IC800 HA11801 9NT
C819 10/16 (M)
R806 10K
C804 82P
C803 0. 022/25 (K)
C805 0. 022/25 (Z)
C806 0. 1/50
R807 470K
C807 390P (K)
R811 10K
R830 6. 8K
R809 47K
C808 0. 0022/16 (N)
C809
C810 47/6. 3 (M)
R805 15K
R804 220
R808 390K
L801 100
R810 1/4W 4. 7K
R803 1. 8K
C801
L800 100
R812 1K
C814 560P (K)
L802 100
L805 10
C818 82P
R820 1/6W 360
R821 1/6W 300
L806 39
C817 27P
R823 1/6W 560
R822 560
TR802 2SC3330 (T. U)
R819 2. 2K
R818 5. 6K
C816 0. 01/16 (N)
R817 1/6W 820
C815 47P
L804 47
TR801 2SA1317 (T. U)
R816 390
R815 390
R813 2. 2K
C813 0. 01/16
R814 2. 2K
L803 100
C812 0. 022/25 (Z)
C811 47/6. 3 (M)
C SWP
SWP
IDL 5V
2/4·6
CUE/REV
A·MUTE
CUE/REV
SWP
REC
STILL
EE
A·OUT
A·IN
GND
REC FM
2/4. 6
PB·Y
IDL 9V
REC S9
IDL 5V
GND
PB LC
C SWP
WF11
TO MAIN PCB WF11
WF10
TO MAIN PCB WF10
WF15
EDIT
PICTURE
RESET
TO MAIN PCB WF12
WF12
-35V
AC3. 7V
AC3. 7V
BU5V
P·DOWN
QUICK START
D917 BG5525S
D918 BG5525S
R905 47
D919 HZ7L-B3
R908 82
R907 82
R906 100K
TR909 DTC143TS
PICTURE
VR900 20K
D921 1SS131
FL900 FLV132
LP EP
START STOP
AM PM
VPS AUTO STOP
VCR
QUICK TIMER
R913 47K
R914 47K
R915 47K
R916 47K
R917 47K
IC904 μPC1490HA
SHAPER
DETECTOR
LIMITER
ABLC
L902 100
TR907 DTC143TS
TR908 DTC143TS
C913 100/63 (M)
C914 0. 01/16 (N)
L901 220
R920 22K
C912 0. 001 (K)
R919 160K
C911 3. 3/50 (M)
R918 1/6W 4. 7K
C910 1/50 (M)
D920 PN323B -LF
P62
S0
P61
S10
S1
P63
KEY1
KEY2
KEY3
KEY4
KEY5
KEY6
LED AFC
GND
P900
P901
D950 BG3402S
AFC/MEMO
D951 1SS131
D952 1SS131
D953 1SS131
FAST
BAND
SW951
SW952
SW953
SLOW
MEMO
SW954
SW955
SW956
D954 1SS131
PRESET
CANCEL
NORMAL
D955 1SS131
SW957

PRE-AMP&AUDIO PCB V1075A501C

INDICATED VOLTAGE MEASURED ON P. B. MODE
( ) : REC MODE

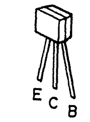
PRESET PCB V1075A501E

| | |
|---|---|
| ▬ | :B (POWER SUPPLY) LINE |
| ▬ | :REC CHROMA SIGNAL |
| ▬ | :P. B. CHROMA SIGNAL |
| ▬ | :REC Y SIGNAL |
| ▬ | :P. B. Y SIGNAL |

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/8W (J)
ALL CAPACITORS IN μF 50WV (J)
ALL INDUCTORS IN μH (K)

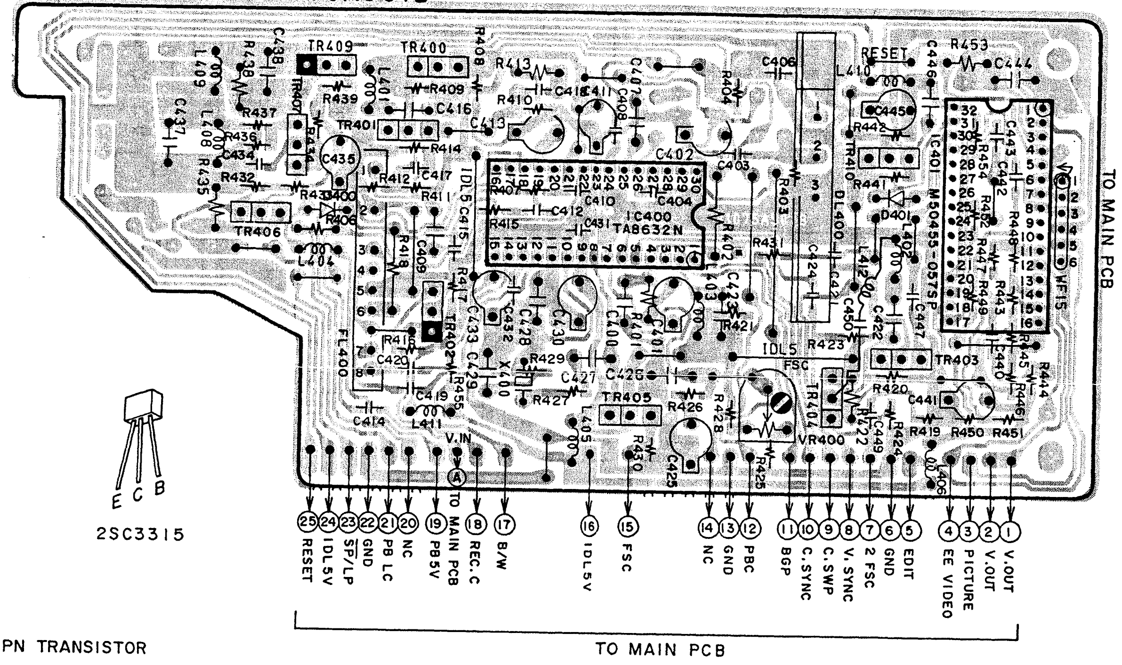
# VS-33U/UM, VS-35U CHROMA/AUDIO/ PRE-AMP/OPERATION SCHEMATIC DIAGRAM

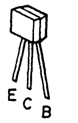
NO. 5-4 870812A



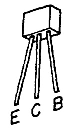
2SA1317
2SC3330
DTC144ES

CHROMA PCB V1075A501B


TR409
TR400
TR401
TR406
TR402
TR403
TR404
TR405
IC400 TA8632N
IC401 M50455-057SP
RESET
FL400
X400
VR400
WF15
TO MAIN PCB
25 RESET
24 IDL5V
23 SP/LP
22 GND
21 PB LC
20 NC
19 PB5V
18 REC.C
17 B/W
16 IDL5V
15 FSC
14 NC
13 GND
12 PBC
11 BGP
10 C.SYNC
9 C.SWP
8 V.SYNC
7 2 FSC
6 GND
5 EDIT
4 EE VIDEO
3 PICTURE
2 V.OUT
1 V.OUT
TO MAIN PCB



2SA1317
2SC3330

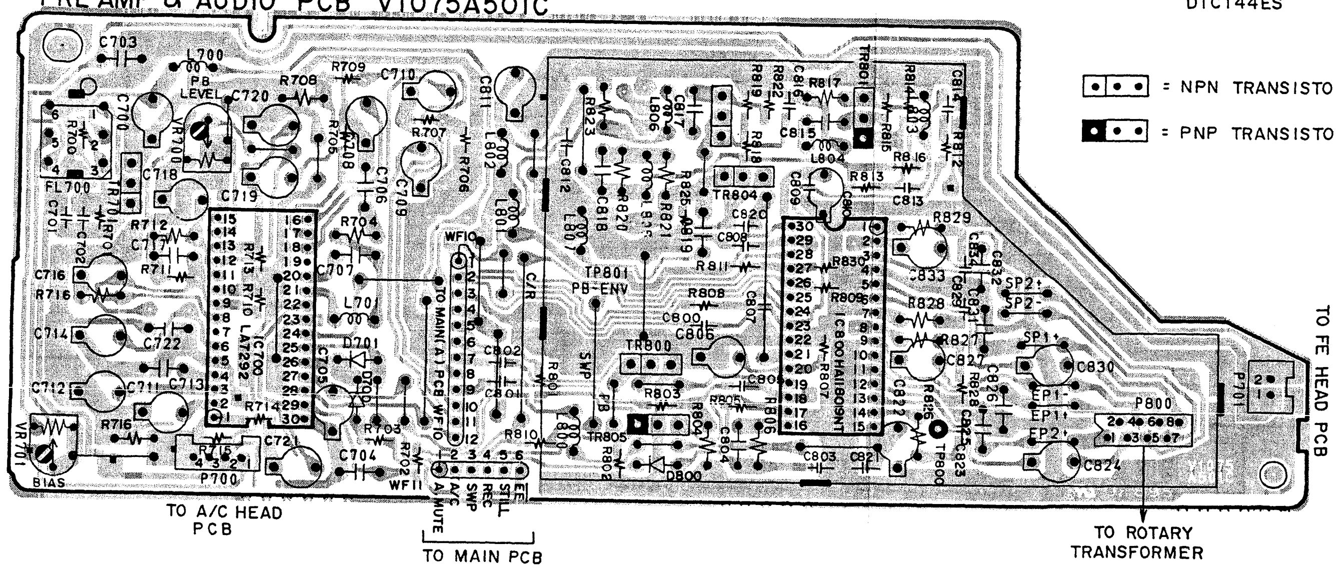


2SC3315

[• • •] = NPN TRANSISTOR

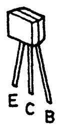
[■ • •] = PNP TRANSISTOR

PRE AMP & AUDIO PCB V1075A501C


PB LEVEL
VR700
IC700 LA7292
IC800 HA11800NT
TR800
TR804
TP801 PB-ENV
TP800
FL700
P700
P701
P800
WF10
WF11
BIAS
VR701
TO A/C HEAD PCB
TO MAIN PCB WF11
TO ROTARY TRANSFORMER
TO FE HEAD PCB

[• • •] = NPN TRANSISTOR

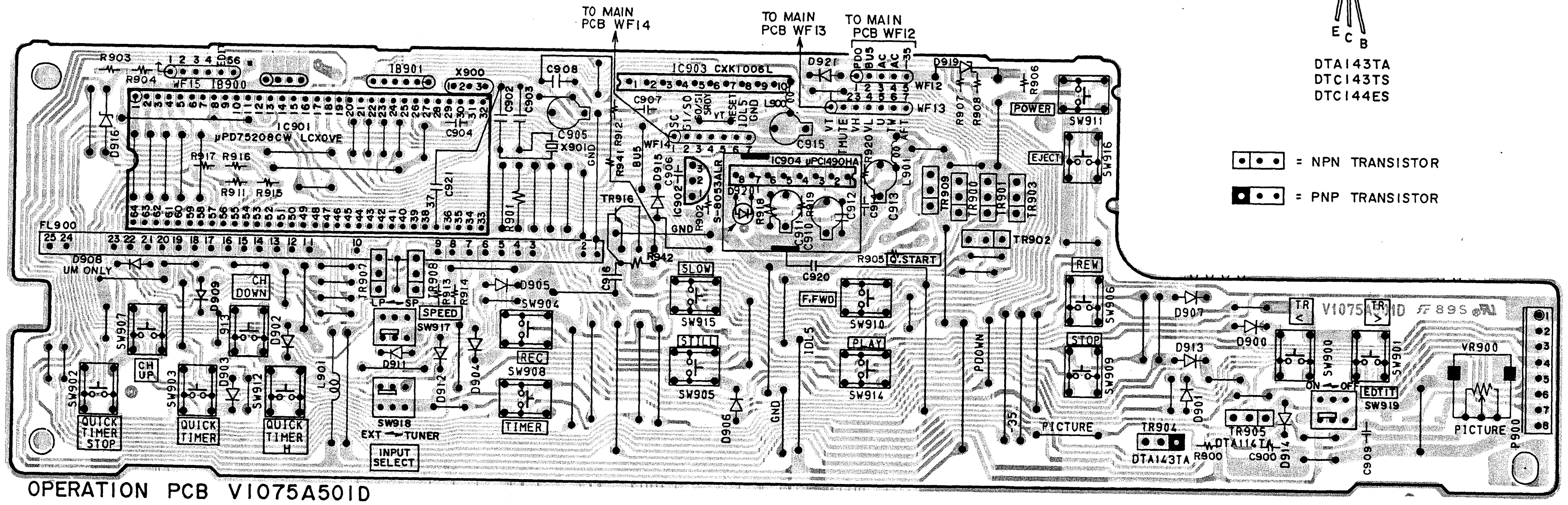
[■ • •] = PNP TRANSISTOR



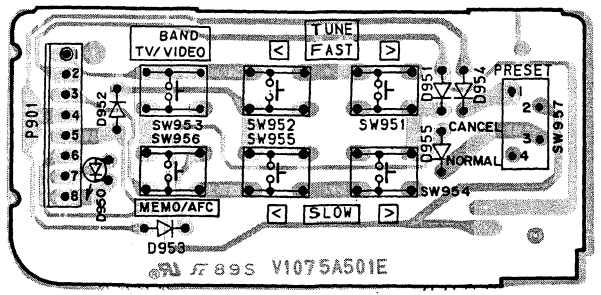
DTA143TA
DTC143TS
DTC144ES

[• • •] = NPN TRANSISTOR

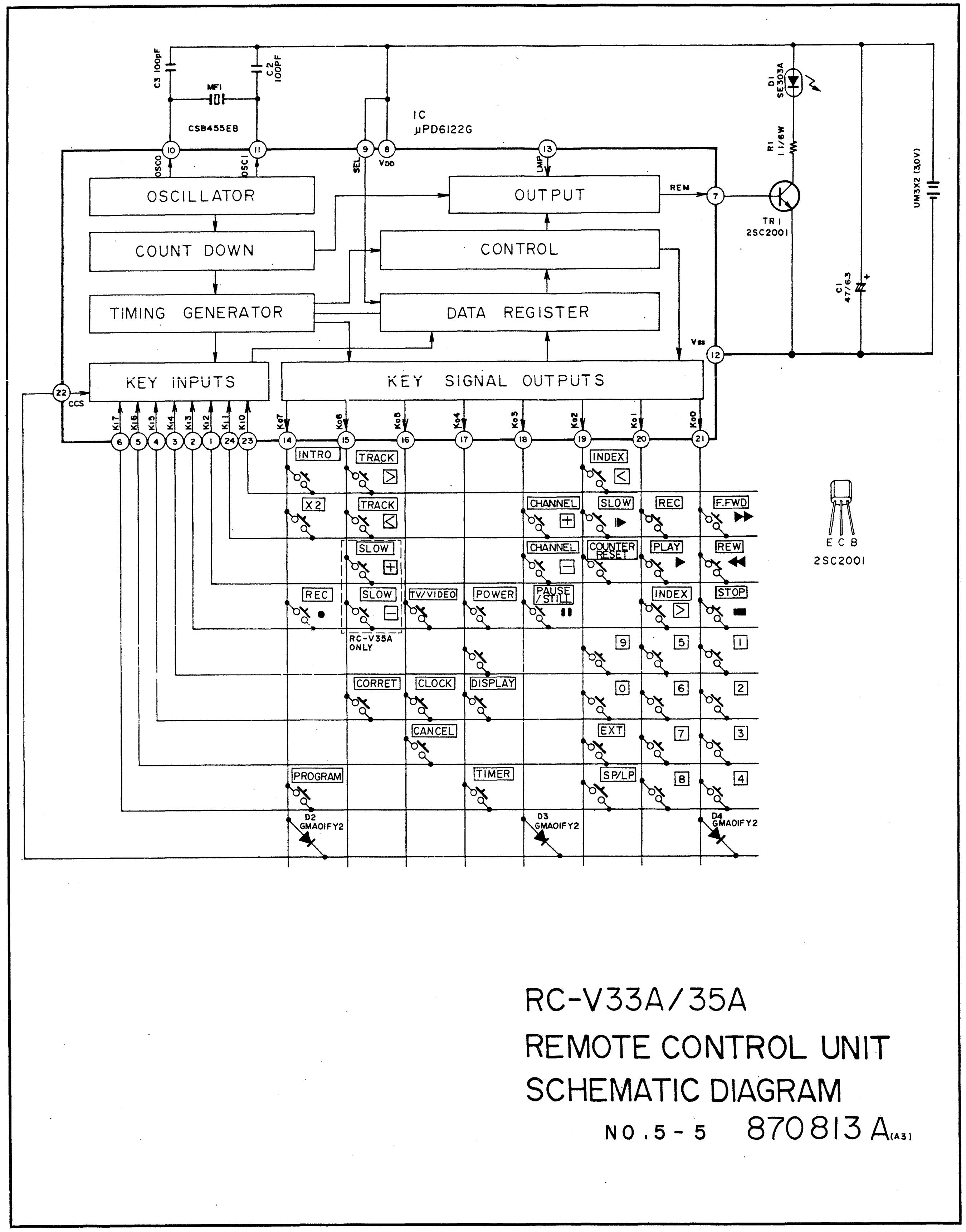
[■ • •] = PNP TRANSISTOR


TO MAIN PCB WF14
TO MAIN PCB WF13
TO MAIN PCB WF12
IC901 μPD75208CW LCXOVE
IC903 CXK1006L
IC904 μPC1490HA
IB900
IB901
X900
X901
FL900
WF15
WF14
WF13
WF12
D908 UM ONLY
POWER
EJECT
REW
STOP
F.FWD
PLAY
SLOW
STILL
REC
TIMER
SPEED
LP SP
CH UP
CH DOWN
QUICK TIMER STOP
QUICK TIMER
QUICK TIMER H
INPUT SELECT
EXT TUNER
Q.START
PICTURE
EDIT
TR
VR900
TR904 DTA143TA
TR905 DTA114TA
SW911
SW916
SW906
SW909
SW910
SW914
SW915
SW905
SW908
SW904
SW917
SW918
SW902
SW903
SW907
SW912
SW913
SW919
ON OFF
P900

OPERATION PCB V1075A501D

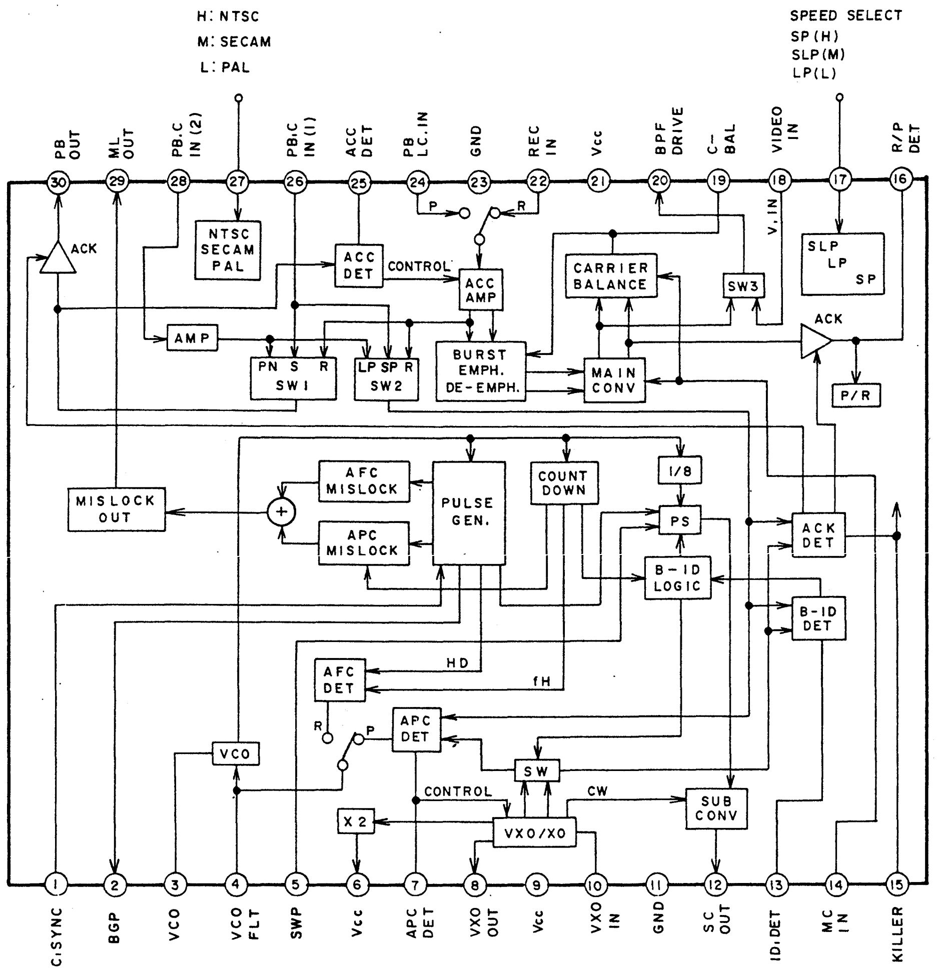

BAND TV/VIDEO
TUNE FAST
PRESET
CANCEL
NORMAL
MEMO/AFC
SLOW
SW951
SW952
SW953
SW954
SW955
SW956
SW957
D952
D953
D954
D955
P901
V1075A501E

PRESET PCB V1075A501E

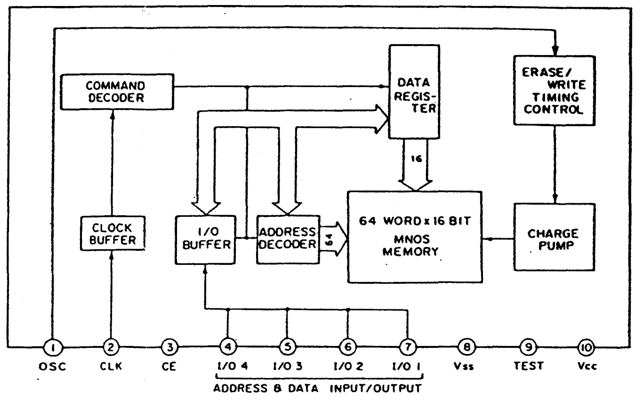

C3 100pF
MF1
C2 100pF
CSB455EB
IC
μPD6122G
OSCO
OSCI
SEL
VDD
LMP
OSCILLATOR
OUTPUT
REM
COUNT DOWN
CONTROL
TIMING GENERATOR
DATA REGISTER
Vss
KEY INPUTS
KEY SIGNAL OUTPUTS
CCS
Ki7
Ki6
Ki5
Ki4
Ki3
Ki2
Ki1
Ki0
Ko7
Ko6
Ko5
Ko4
Ko3
Ko2
Ko1
Ko0
D1 SE303A
R1 1 1/6W
TR1 2SC2001
C1 47/6.3
UM3X2 (3.0V)
E C B
2SC2001
INTRO
TRACK
INDEX
X2
TRACK
CHANNEL
SLOW
REC
F.FWD
SLOW
CHANNEL
COUNTER RESET
PLAY
REW
REC
SLOW
TV/VIDEO
POWER
PAUSE/STILL
INDEX
STOP
RC-V35A ONLY
9
5
1
CORRET
CLOCK
DISPLAY
0
6
2
CANCEL
EXT
7
3
PROGRAM
TIMER
SP/LP
8
4
D2 GMA01FY2
D3 GMA01FY2
D4 GMA01FY2

RC-V33A/35A
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
NO.5-5 870813 A(A3)

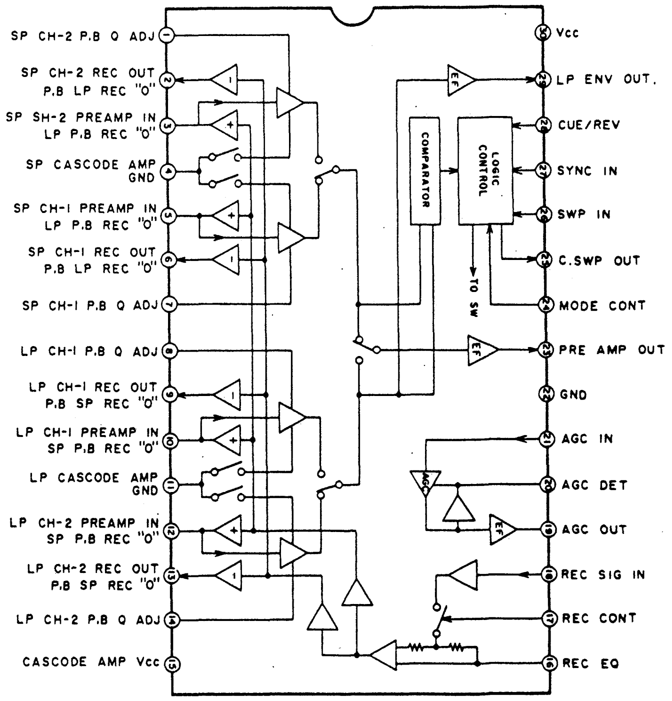
## TA8632 (VIDEO C-SIGNAL PROCESSING)


H: NTSC
M: SECAM
L: PAL
SPEED SELECT
SP(H)
SLP(M)
LP(L)
PB OUT
ML OUT
PB.C IN (2)
PB.C IN (1)
ACC DET
PB LC.IN
GND
REC IN
Vcc
BPF DRIVE
C-BAL
VIDEO IN
R/P DET
ACK
NTSC SECAM PAL
ACC DET
CONTROL
ACC AMP
CARRIER BALANCE
SW3
V.IN
SLP LP SP
ACK
AMP
PN S R SW1
LP SP R SW2
BURST EMPH. DE-EMPH.
MAIN CONV
P/R
MISLOCK OUT
AFC MISLOCK
APC MISLOCK
PULSE GEN.
COUNT DOWN
1/8
PS
ACK DET
B-ID LOGIC
B-ID DET
HD
fH
AFC DET
APC DET
VCO
SW
CONTROL
CW
X2
VXO/XO
SUB CONV
C.SYNC
BGP
VCO
VCO FLT
SWP
Vcc
APC DET
VXO OUT
Vcc
VXO IN
GND
SC OUT
ID.DET
MC IN
KILLER

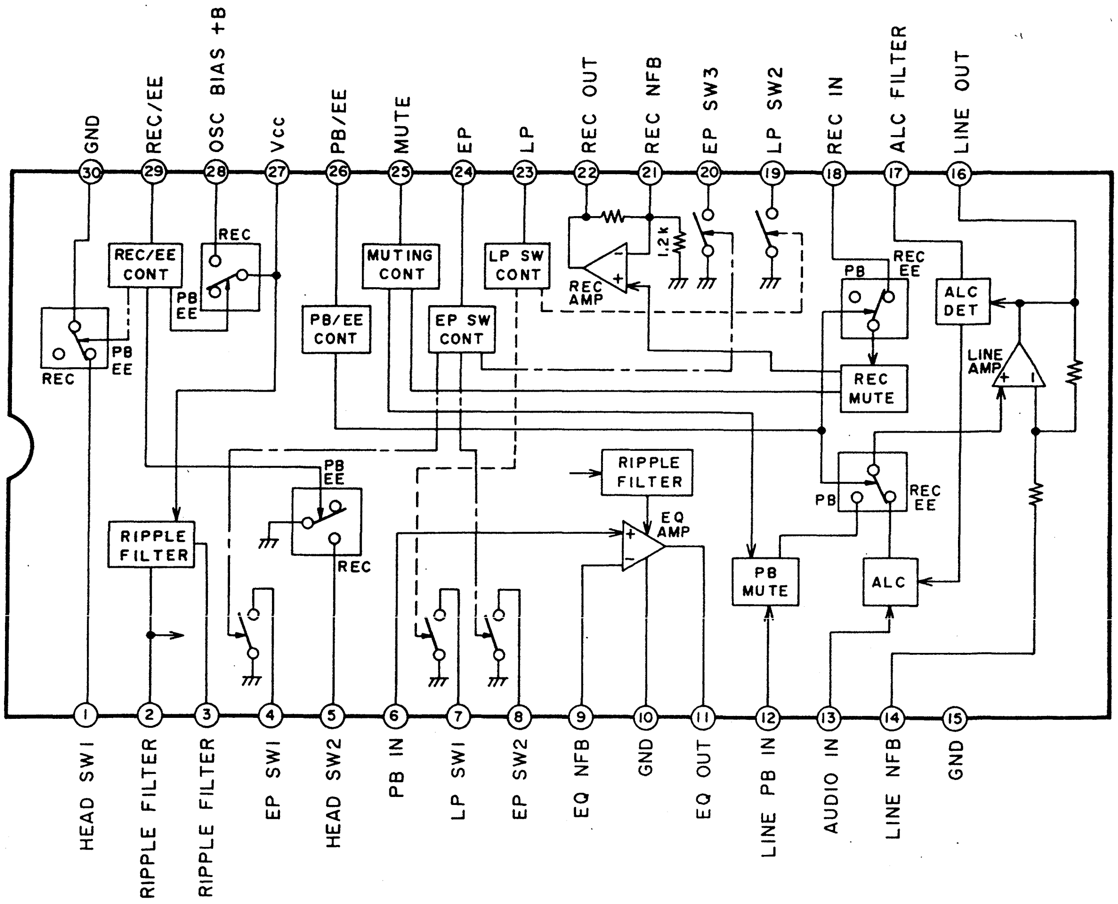
## CXK1006 (NON VOLATILE RAM)


COMMAND DECODER
DATA REGIS-TER
ERASE/WRITE TIMING CONTROL
16
CLOCK BUFFER
I/O BUFFER
ADDRESS DECODER
64
64 WORD x 16 BIT MNOS MEMORY
CHARGE PUMP
OSC
CLK
CE
I/O 4
I/O 3
I/O 2
I/O 1
Vss
TEST
Vcc
ADDRESS & DATA INPUT/OUTPUT

## HA118019NT (PRE-AMP)

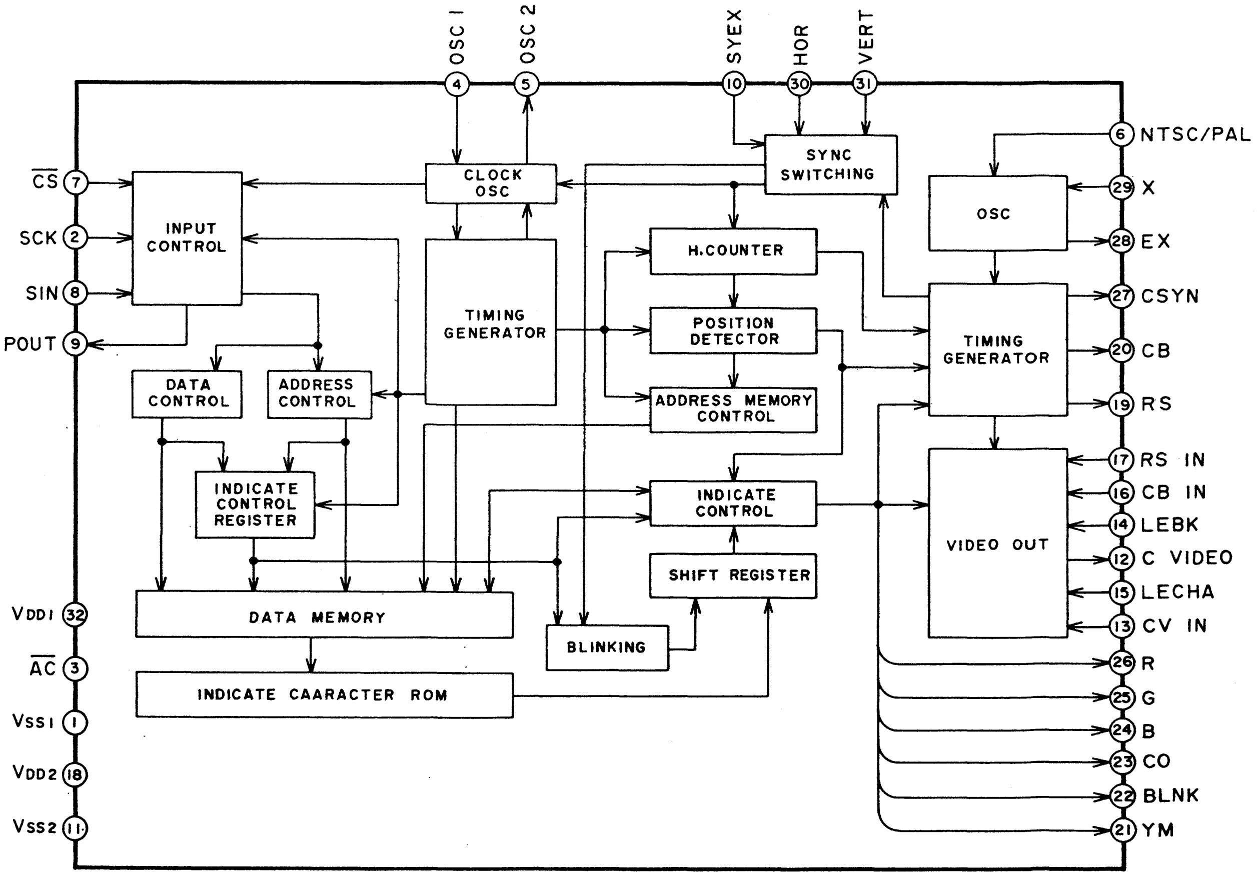

SP CH-2 P.B Q ADJ
SP CH-2 REC OUT P.B LP REC "0"
SP SH-2 PREAMP IN LP P.B REC "0"
SP CASCODE AMP GND
SP CH-1 PREAMP IN LP P.B REC "0"
SP CH-1 REC OUT P.B LP REC "0"
SP CH-1 P.B Q ADJ
LP CH-1 P.B Q ADJ
LP CH-1 REC OUT P.B SP REC "0"
LP CH-1 PREAMP IN SP P.B REC "0"
LP CASCODE AMP GND
LP CH-2 PREAMP IN SP P.B REC "0"
LP CH-2 REC OUT P.B SP REC "0"
LP CH-2 P.B Q ADJ
CASCODE AMP Vcc
Vcc
LP ENV OUT.
CUE/REV
SYNC IN
SWP IN
C.SWP OUT
MODE CONT
PRE AMP OUT
GND
AGC IN
AGC DET
AGC OUT
REC SIG IN
REC CONT
REC EQ
COMPARATOR
LOGIC CONTROL
TO SW
EF

## LA7292 (AUDIO SIGNAL REC/P.B AMPLIFIER)



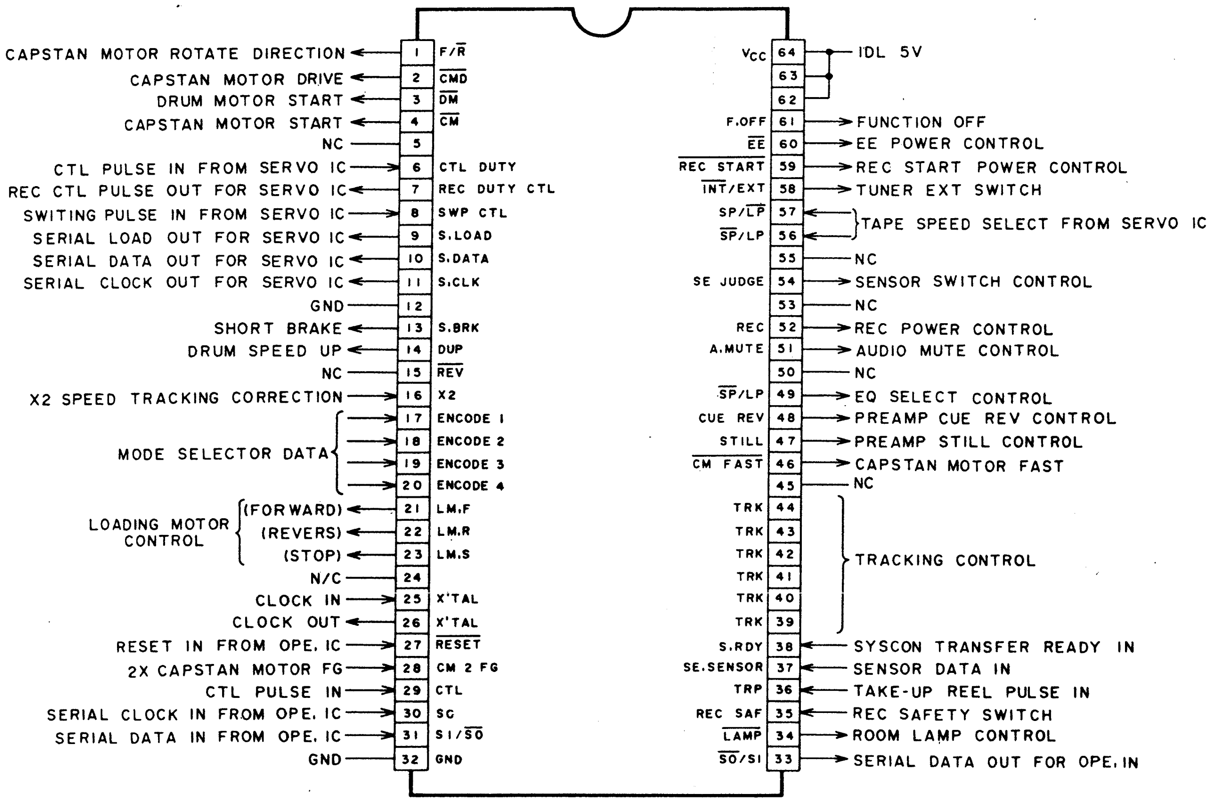
GND
REC/EE
OSC BIAS +B
Vcc
PB/EE
MUTE
EP
LP
REC OUT
REC NFB
EP SW3
LP SW2
REC IN
ALC FILTER
LINE OUT
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
REC/EE CONT
REC
PB EE
PB/EE CONT
MUTING CONT
EP SW CONT
LP SW CONT
REC AMP
1.2k
REC EE
PB
ALC DET
LINE AMP
REC MUTE
RIPPLE FILTER
EQ AMP
PB MUTE
ALC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
HEAD SW1
RIPPLE FILTER
RIPPLE FILTER
EP SW1
HEAD SW2
PB IN
LP SW1
EP SW2
EQ NFB
GND
EQ OUT
LINE PB IN
AUDIO IN
LINE NFB
GND

## M50455-073SP (CHARACTOR GENERATOR)

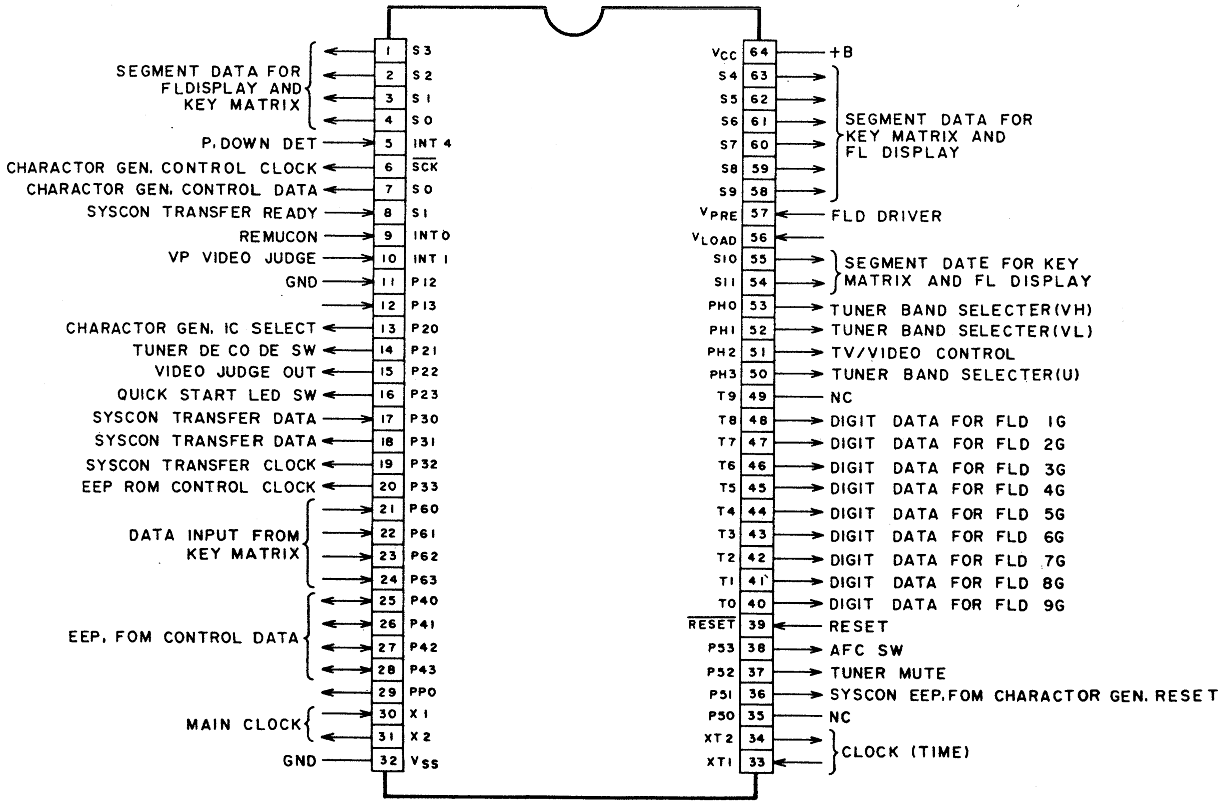


OSC 1
OSC 2
SYEX
HOR
VERT
4
5
10
30
31
CS
SCK
SIN
POUT
7
2
8
9
INPUT CONTROL
CLOCK OSC
TIMING GENERATOR
SYNC SWITCHING
H.COUNTER
POSITION DETECTOR
ADDRESS MEMORY CONTROL
DATA CONTROL
ADDRESS CONTROL
INDICATE CONTROL REGISTER
INDICATE CONTROL
SHIFT REGISTER
DATA MEMORY
BLINKING
INDICATE CAARACTER ROM
OSC
TIMING GENERATOR
VIDEO OUT
VDD1 32
AC 3
VSS1 1
VDD2 18
VSS2 11
6 NTSC/PAL
29 X
28 EX
27 CSYN
20 CB
19 RS
17 RS IN
16 CB IN
14 LEBK
12 C VIDEO
15 LECHA
13 CV IN
26 R
25 G
24 B
23 CO
22 BLNK
21 YM

## MB88525-186G LCXSYN1 (SYSTEM CONTROL)


CAPSTAN MOTOR ROTATE DIRECTION 1 F/R
CAPSTAN MOTOR DRIVE 2 CMD
DRUM MOTOR START 3 DM
CAPSTAN MOTOR START 4 CM
NC 5
CTL PULSE IN FROM SERVO IC 6 CTL DUTY
REC CTL PULSE OUT FOR SERVO IC 7 REC DUTY CTL
SWITING PULSE IN FROM SERVO IC 8 SWP CTL
SERIAL LOAD OUT FOR SERVO IC 9 S.LOAD
SERIAL DATA OUT FOR SERVO IC 10 S.DATA
SERIAL CLOCK OUT FOR SERVO IC 11 S.CLK
GND 12
SHORT BRAKE 13 S.BRK
DRUM SPEED UP 14 DUP
NC 15 REV
X2 SPEED TRACKING CORRECTION 16 X2
MODE SELECTOR DATA
17 ENCODE 1
18 ENCODE 2
19 ENCODE 3
20 ENCODE 4
LOADING MOTOR CONTROL
(FORWARD) 21 LM.F
(REVERS) 22 LM.R
(STOP) 23 LM.S
N/C 24
CLOCK IN 25 X'TAL
CLOCK OUT 26 X'TAL
RESET IN FROM OPE. IC 27 RESET
2X CAPSTAN MOTOR FG 28 CM 2 FG
CTL PULSE IN 29 CTL
SERIAL CLOCK IN FROM OPE. IC 30 SC
SERIAL DATA IN FROM OPE. IC 31 SI/SO
GND 32 GND
VCC 64 IDL 5V
63
62
F.OFF 61 FUNCTION OFF
EE 60 EE POWER CONTROL
REC START 59 REC START POWER CONTROL
INT/EXT 58 TUNER EXT SWITCH
SP/LP 57
SP/LP 56
TAPE SPEED SELECT FROM SERVO IC
55 NC
SE JUDGE 54 SENSOR SWITCH CONTROL
53 NC
REC 52 REC POWER CONTROL
A.MUTE 51 AUDIO MUTE CONTROL
50 NC
SP/LP 49 EQ SELECT CONTROL
CUE REV 48 PREAMP CUE REV CONTROL
STILL 47 PREAMP STILL CONTROL
CM FAST 46 CAPSTAN MOTOR FAST
45 NC
TRK 44
TRK 43
TRK 42
TRK 41
TRK 40
TRK 39
TRACKING CONTROL
S.RDY 38 SYSCON TRANSFER READY IN
SE.SENSOR 37 SENSOR DATA IN
TRP 36 TAKE-UP REEL PULSE IN
REC SAF 35 REC SAFETY SWITCH
LAMP 34 ROOM LAMP CONTROL
SO/SI 33 SERIAL DATA OUT FOR OPE. IN

## $\mu$PD75208 CW-LCXOPU (OPERATION)


SEGMENT DATA FOR FLDISPLAY AND KEY MATRIX
1 S3
2 S2
3 S1
4 S0
P.DOWN DET 5 INT 4
CHARACTOR GEN. CONTROL CLOCK 6 SCK
CHARACTOR GEN. CONTROL DATA 7 SO
SYSCON TRANSFER READY 8 SI
REMUCON 9 INT0
VP VIDEO JUDGE 10 INT1
GND 11 P12
12 P13
CHARACTOR GEN. IC SELECT 13 P20
TUNER DE CO DE SW 14 P21
VIDEO JUDGE OUT 15 P22
QUICK START LED SW 16 P23
SYSCON TRANSFER DATA 17 P30
SYSCON TRANSFER DATA 18 P31
SYSCON TRANSFER CLOCK 19 P32
EEP ROM CONTROL CLOCK 20 P33
DATA INPUT FROM KEY MATRIX
21 P60
22 P61
23 P62
24 P63
EEP. FOM CONTROL DATA
25 P40
26 P41
27 P42
28 P43
29 PPO
MAIN CLOCK
30 X1
31 X2
GND 32 VSS
VCC 64 +B
S4 63
S5 62
S6 61
S7 60
S8 59
S9 58
SEGMENT DATA FOR KEY MATRIX AND FL DISPLAY
VPRE 57 FLD DRIVER
VLOAD 56
S10 55
S11 54
SEGMENT DATE FOR KEY MATRIX AND FL DISPLAY
PH0 53 TUNER BAND SELECTER(VH)
PH1 52 TUNER BAND SELECTER(VL)
PH2 51 TV/VIDEO CONTROL
PH3 50 TUNER BAND SELECTER(U)
T9 49 NC
T8 48 DIGIT DATA FOR FLD 1G
T7 47 DIGIT DATA FOR FLD 2G
T6 46 DIGIT DATA FOR FLD 3G
T5 45 DIGIT DATA FOR FLD 4G
T4 44 DIGIT DATA FOR FLD 5G
T3 43 DIGIT DATA FOR FLD 6G
T2 42 DIGIT DATA FOR FLD 7G
T1 41 DIGIT DATA FOR FLD 8G
T0 40 DIGIT DATA FOR FLD 9G
RESET 39 RESET
P53 38 AFC SW
P52 37 TUNER MUTE
P51 36 SYSCON EEP.FOM CHARACTOR GEN. RESET
P50 35 NC
XT2 34
XT1 33
CLOCK (TIME)

# VI. ELECTRICAL ADJUSTMENT

Precautionary items prior to adjustments

1. The color bar generator output should be 1.0 Vp-p.
2. Video output terminal should be terminated with 75 ohms (dummy or load).

Required following Test tapes.

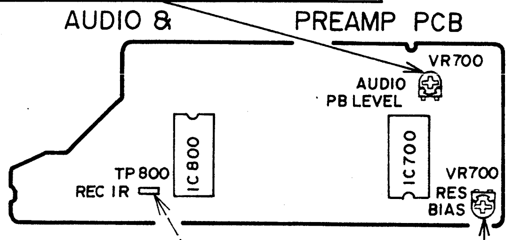
| Test tape | Parts No. |
|---|---|
| TF-528BL | AT-751357 |
| TF-540RFS | AT-751363 |
| TF-542CBS | AT-751365 |
| TF-543CBL | AT-751366 |

| STEP | ADJUSTMENT ITEM |
|---|---|
| 1. | MODE and INPUT SIGNAL/TEST TAPE |
| 2. | TEST POINT and ADJ. part |
| 3. | RESULT & REMARKS |

ADJ. part →
Test Point →

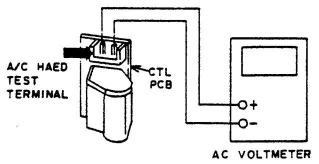
### 3 AUDIO PB LEVEL

1. "PB" Test Tape TF-528BL
2. Audio Out & VR700
3. • Connect AC Voltmeter to Audio out.
   - −4.0 ± 0.5 dBs


AUDIO & PREAMP PCB
VR700
AUDIO PB LEVEL
IC800
IC700
TP800
REC IR
VR700
RES BIAS

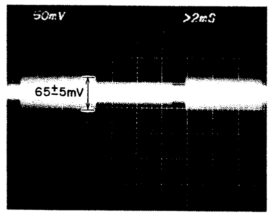
### 4 AUDIO REC BIAS

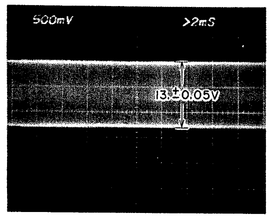
1. "REC" (no signal input)
2. Test terminal on the A/C Head & VR701.
3. • Connect AC Voltmeter to test terminal.
   - 3.4 ± 0.1 mV


A/C HAED TEST TERMINAL
CTL PCB
AC VOLTMETER
+
−

### 9 VIDEO REC CURRENT

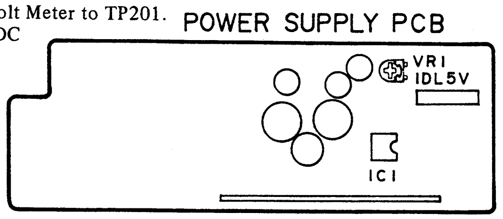
1. "REC" NTSC color bar signal.
2. TP800 (REC I.R) & VR207 (CHROMA), VR206 (Y).
3. • Connect Oscilloscope to TP800 (REC I.R)
   - • Turn the VR206 (Y) fully counterclockwise.
   - • Adjust VR207 (CHROMA) so that chroma REC current becomes 65 ± 5 mVp-p.
   - • Adjust VR206 (Y) so that Y REC current becomes 1.3 ± 0.05 Vp-p.





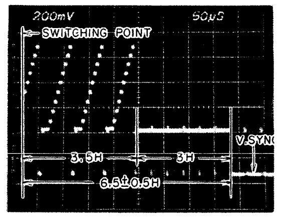
### 1 IDL 5V

1. STOP MODE
2. TP201 & VR1
3. • Connect DC Volt Meter to TP201.
   - 5 ± 0.05V DC


POWER SUPPLY PCB
VR1
IDL5V
IC1

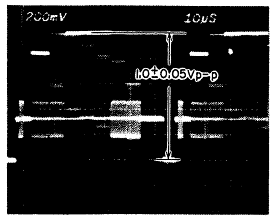
### 13 REC SWITCHING POINT

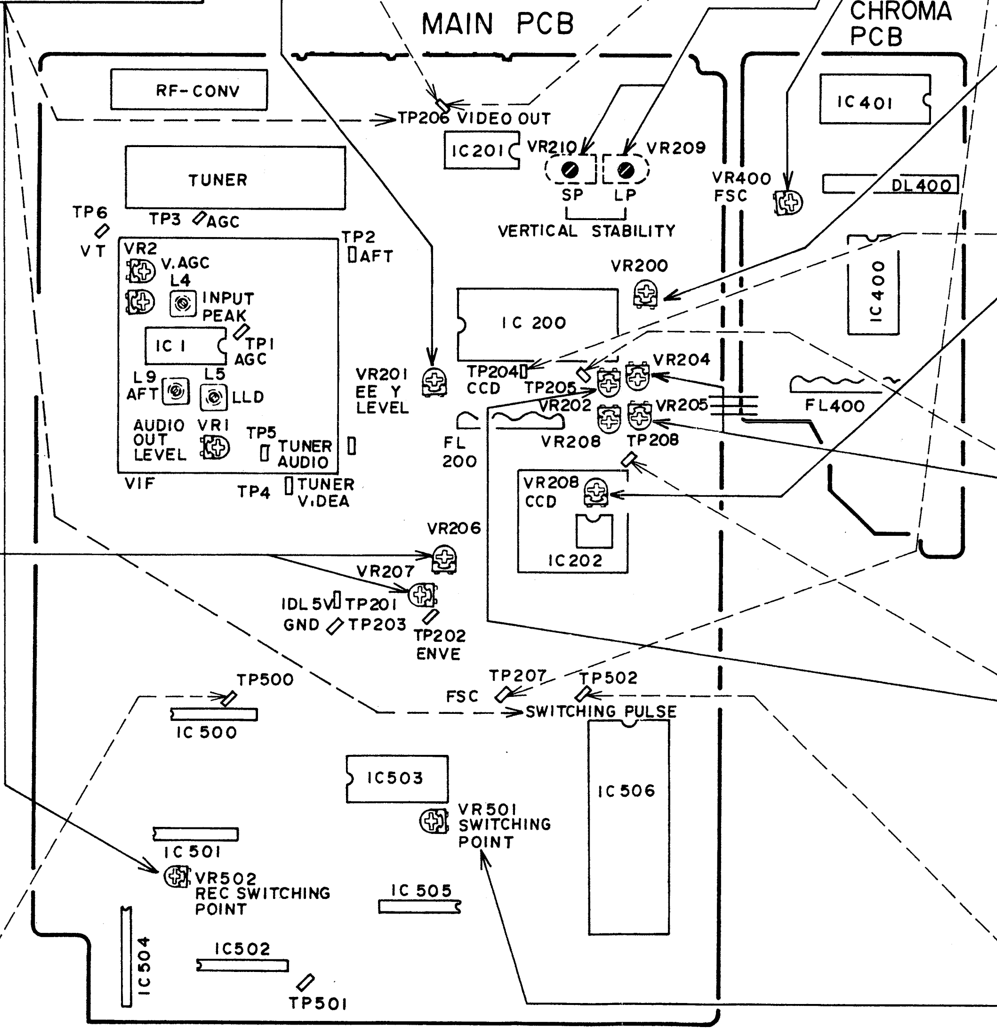
1. "REC" NTSC color bar signal.
2. TP502 (SWP), TP206 (V-OUT) & VR502
3. • Connect Oscilloscope to TP502 (SWP) for torriger signal and connect to TP206 (V-OUT).
   - • Adjust VR502 so that switching point becomes 6.5 ± 0.5 H from the V-SYNC.



### 5 VIDEO E-E LEVEL

1. "E-E" (Stop Mode) input NTSC color bar signal.
2. TP206 (V-OUT) & VR201
3. • Connect Oscilloscope to TP206.
   - 1.0 ± 0.05 Vp-p

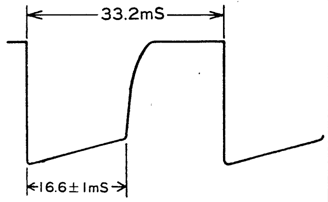



MAIN PCB
CHROMA PCB
RF-CONV
TP206 VIDEO OUT
IC201
VR210
VR209
SP
LP
VERTICAL STABILITY
VR400 FSC
IC401
DL400
TUNER
TP6
VT
TP3 AGC
TP2 AFT
VR2 V.AGC
L4
INPUT PEAK
IC1
TP1 AGC
L9 AFT
L5
LLD
AUDIO OUT LEVEL
VR1
TP5
TUNER AUDIO
VIF
TP4
TUNER VIDEA
VR200
IC400
IC 200
VR201 EE Y LEVEL
TP204 CCD
TP205
VR204
VR202
VR205
VR208
TP208
FL 200
FL400
VR208 CCD
IC202
VR206
VR207
IDL 5V TP201
GND TP203
TP202 ENVE
TP500
IC 500
TP207 FSC
TP502
SWITCHING PULSE
IC503
IC 506
VR501 SWITCHING POINT
IC 501
VR502 REC SWITCHING POINT
IC 505
IC 504
IC502
TP501

### 14 TRACKING PRESET

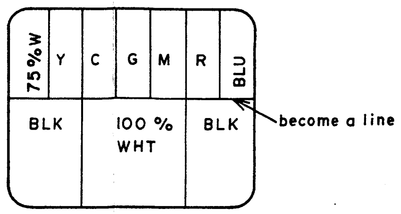
Tracking preset data can be adjusted as following.

1. Plug in the AC Power Cord with the Power, Eject and REW buttons depressed steadily at the same time.
2. In an SP play mode. Tracking data 0 to 3F which will be displayed in the FLD CH. No. window may be set to 1F or 20 with the Tracking buttons. At this time, Tracking MM waveform, IC 503 pin 24, should be within16.6± 1mS.
3. Depress the Band selector button to memorize the Tracking preset data.
4. Confirm that the maximum Envelope TP202 on the Main P.C.B. should be obtained on Rec/P.B mode and Tracking marker "T" is in the center on the monitor screen.



### 12 SP and LP STILL VERTICAL STABILITY

1. "PB" → "PAUSE/STILL" (Test tape TF-542CBS)
2. TV screen & VR210
3. In the PB/STILL mode, Observe the TV screen and adjust VR210 until no picture vibration.
4. Switch the Test tape to TF-543CBL.
5. In the same manner as above, adjust VR209 until no picture vibration.

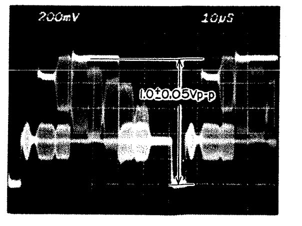

75%W
Y
C
G
M
R
BLU
BLK
100 % WHT
BLK
become a line

### 6 FSC

1. "E-E (Stop Mode) input NTSC color bar signal.
2. TP207 (FSC) & VR400
3. • Connect FRQ counter to TP207 (FSC)
   - • 3.579545 MHz = 10 Hz

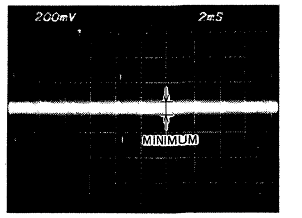
### 10 EP REC/PB VIDEO LEVEL

1. "REC" – "PB" NTSC color bar signal.
2. TP206 (V-OUT) & VR200 (PB LEVEL)
3. • Connect Oscilloscope to TP206 (V-OUT)
   - • 1.0 ± 0.05 Vp-p
   - • Set the REC speed to EP.



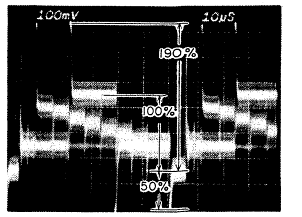
### 11 CCD

1. "PB" Test tape TF-542CBS
2. TP204 (CCD) & VR208 (CCD)
3. • Connect Oscilloscope to TP204 (CCD).
   - • Adjust VR208 so that CCD level becomes minimum.



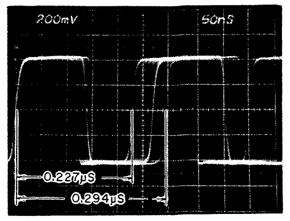
### 8 WHITE & DARK CLIP

1. "REC" NTSC color bar signal.
2. TP205 (W/D CLIP) & VR205 (W. CLIP), VR204 (D. CLIP)
3. • Connect Oscilloscope to TP205 (W/D CLIP)
   - • VR205 (WHITE CLIP) . . . 190%
   - • VR204 (DARK CLIP) . . . . 50%



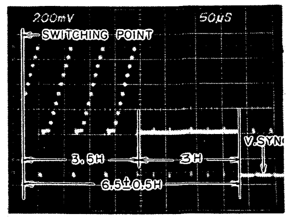
### 7 CARRIER SET & DEVIATION

1. "REC" NTSC color bar signal.
2. TP208 (REC FM) & VR203 (CARRIER), VR202 (DEVIATION)
3. • Connect Oscilloscope to TP208 (REC FM)
   - • VR203 (CARRIER) . . . 0.294μS (3.4MHz)
   - • VR202 (DEVIATION). . 0.227μS (4.4MHz)



### 2 PB SWITCHING POINT

1. "PB" Test Tape TF-540RFS
2. TP502 (SWP), TP206 (V-OUT) & VR501
3. • Connect Oscilloscope to TP502 (SWP) for torriger signal and connect to TP206 (V-OUT).
   - • Adjust VR501 so that switching point becomes 6.5 ± 0.5 H from the V-SYNC.



# VII. PARTS LIST

## ATTENTION

1. **When placing an order for parts, be sure to list Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.**
2. **Please make sure that Part No. is correct when ordering.**
   **If not, a part different from the one you ordered may be delivered.**
3. **Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.**

## HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

### 2. HEAD BASE BLOCK

| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| 2-1x | BH-T2023A320A | HEAD BASE BLOCK |
| 2-2 | HP-H2206A010A | HEAD R/P PR4-8FU C |
| 2-3 | ZS-477876 | PAN20x03STL CMT |
| 2-4 | ZS-536488 | BID20x08STL CMT |
| 2-5 | ZG-402895 | SP CS ANGLE ADJUST |

SP (Service Parts) Classification

A small "x" indicates that this part is not shown in the Photo or Illustration.

This number corresponds with the individual parts index number in that figure.

This number corresponds with the Figure Number.

b) PC Board

### 6. MAIN PC BOARD

| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| 6-IC1 | EI-324536 | IC HD14049BP |
| 6-IC2 | EI-336801 | IC MB8841-564M |
| 6-C1A | EC-338399 | C MMY V 223M 250AC [U,E,B,S] |
| 6-C1B | EC-350949 | C MMY V 223M 250DC [J] |
| 6-C1C | EC-338397 | C MMY V 223M 125AC [C,A] |
| 6-X1 | EI-318384 | OSC X'TAL NC-18C |

Symbols for primary destination

| | |
|---|---|
| [A]: AAL(U.S.A.) | [S]: SAA(Australia) |
| [B]: BEAB(England) | [U]: U/T(Universal Area) |
| [C]: CSA(Canada) | [V]: VDE(W. Germany) |
| [E]: CEE(Europe) | [Y]: Custom Version |
| [J]: JPN(Japan) | |

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

## WARNING

**⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.**

## AVERTISSEMENT

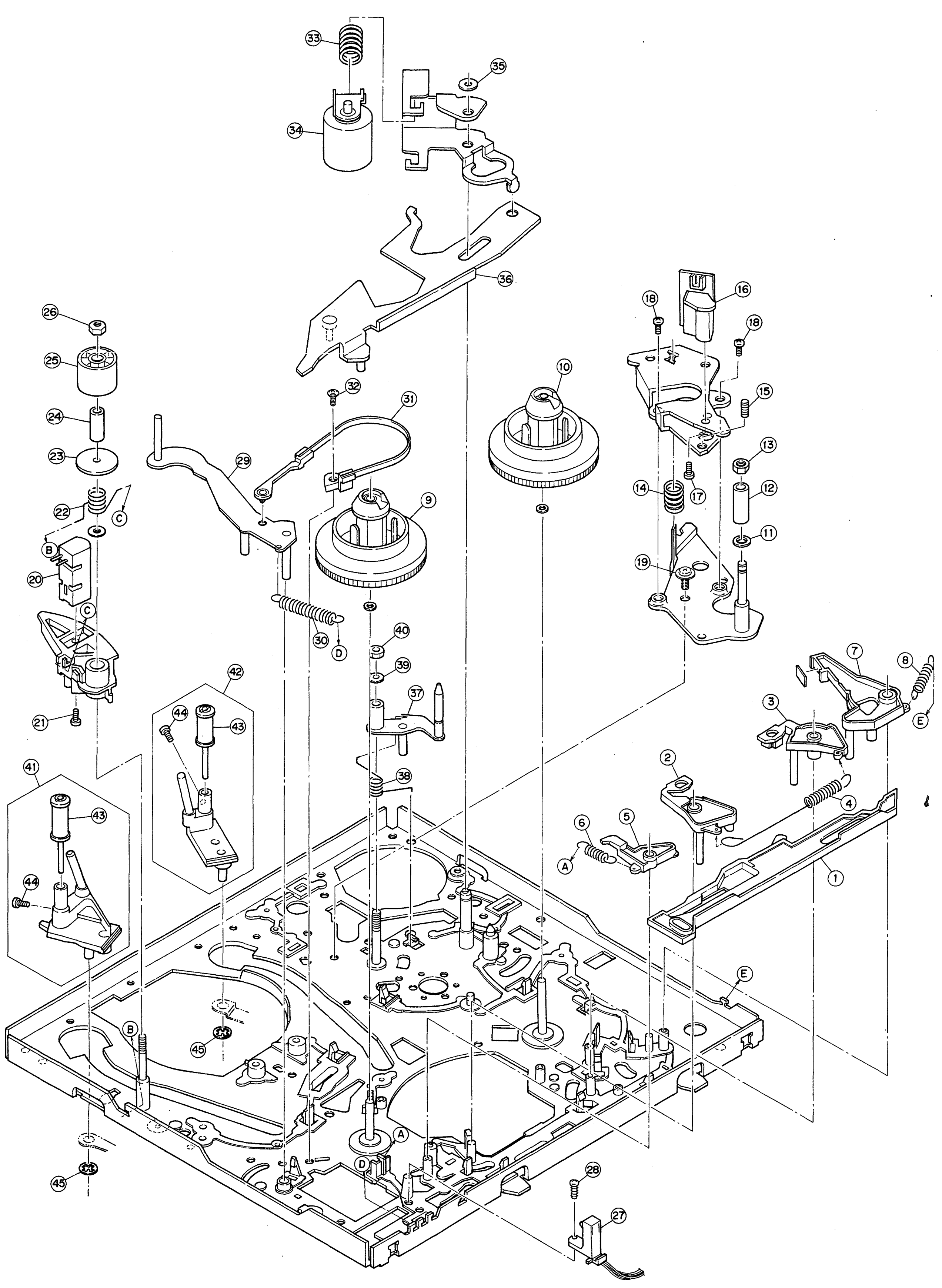
**⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÉCES RECOMMANDEES PAR LÉ FABRICANT.**

## 1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | BL-V1075A130A | PINCH ROLLER BLK VS-35EA |
| 2 | BM-373098 | MOTOR DVX-67A2R2<br>[CAPSTAN MOTOR] |
| 3 | BM-367631 | MOTOR PART<br>[LOADING MOTOR][M901] |
| 4 | BM-M3225A020A | PC MOTOR BLK SM-250<br>[DRUM MOTOR] |
| 5 | BR-367618 | DISK(S)PART |
| 6 | BR-367619 | DISK(T)PART |
| 7 | *BT-373993 | TRANS POW V1077U<br>[U[A],U[C]] |
| 8 | *BT-373994 | TRANS POW V1077UM<br>[UM[U]] |
| 9 | BV-V1075A410A | LOWER DRUM BLK VS-35EA |
| 10 | BV-373934 | RF CONVERTER YAA21-0279 US |
| 11 | BV-V1075A070A | S.LOADING LEADER BLK VS-35EA |
| 12 | BV-V1075A080A | T.U LOADING LEADER BLK VS-35EA |
| 13 | BV-V1075A205A | TW EJECTOR (2) BLK VS-35EA/TW<br>[INCL. 1 TO 34] |
| 14 | BV-V1075A420A | UPPER DRUM BLK VS-35U |
| 15 | EC-368823 | C DBL LAYER EECS5R5H 473Z5.5DC |
| 16 | ED-368826 | D LED BG3402S GREEN |
| 17 | ED-356424 | D LED BG5525S GREEN |
| 18 | ED-373101 | D LED LN59 INFRARED<br>[SENSOR PCB D1] |
| 19 | ED-376111 | D LED SE303AC INFRARED |
| 20 | ED-360409 | D PHOTO PN323B |
| 21 | *ED-379298 | D SILICON BA20B |
| 22 | ED-376838 | D SILICON DSA12G UB1 600/1.2A<br>[UM[U]] |
| 23 | ED-371512 | D SILICON ERA22-04Y F05<br>[UM[U]] |
| 24 | ED-344280 | D SILICON H GMA-01-FY2 F05 |
| 25 | ED-307572 | D SILICON H 1SS131 |
| 26 | ED-624903 | D SILICON H 1S2473 |
| 27 | *ED-367202 | D SILICON S5566B F12<br>[UM[U]] |
| 28 | *ED-379041 | D SILICON S5566B 100/1.0A |
| 29 | *ED-367693 | D SILICON S5566G(LC-7)F12 |
| 30 | ED-376598 | D ZENER H HZS36J B3 F05 |
| 31 | ED-365699 | D ZENER H HZS5.6J B1 F05 |
| 32 | ED-346525 | D ZENER H HZ6L A3 |
| 33 | ED-351419 | D ZENER H HZ7L B3 |
| 34 | ED-346541 | D ZENER H HZ9L B2 |
| 35 | ED-346543 | D ZENER H HZ9L C1 |
| 36 | EE-373926 | TV TUNER TEMH1-023A US |
| 37 | *EF-601301 | FUSE SEMKO T 250V 2.00A<br>[UM[U]] |
| 38 | *EF-258344 | FUSE SEMKO T 250V 800MA<br>[UM[U]] |
| 39 | *EF-306956 | FUSE TSC 125V 2.50A<br>[U[A],U[C]] |
| 40 | *EF-309391 | FUSE TSC 125V 800MA<br>[U[A],U[C]] |
| 41 | EH-368109 | COMP R RKC3BS 473J |
| 42 | EH-374010 | COMP R RKC5BS 473J |
| 43 | EH-366605 | COMP R RKC5BS103J |
| 44 | EH-374012 | COMP R RKC6BS 103J |
| 45 | EH-370413 | DL ADL-FN2135Q-B03 |
| 46 | EH-373922 | FILTER CE CDA4.5ME6A |
| 47 | EH-370811 | FILTER CE SAF45MB70Z |
| 48 | EH-370812 | FILTER CE SFE4.5MB |
| 49 | EH-363276 | FILTER CE TPS4.5MB2 |
| 50 | EH-370615 | FILTER LC FF-71N |
| 51 | EH-373145 | FILTER LC LP LF-71N-02 5P |
| 52 | EH-368896 | FILTER LC MYV-24L |
| 53 | EI-373964 | IC AN3230 |
| 54 | EI-373980 | IC BA15218N |
| 55 | EI-337625 | IC BA236 |
| 56 | EI-353421 | IC BA6229 |
| 57 | EI-360316 | IC BA6305 |
| 58 | *EI-376794 | IC BA6993<br>[UM[U]] |
| 59 | EI-373981 | IC BA6993N |
| 60 | EI-354095 | IC BA718 |
| 61 | EI-373978 | IC BU2734 NTSC CUSTOM |
| 62 | EI-373954 | IC CXK1006L |
| 63 | EI-367909 | IC HA118019NT |
| 64 | *EI-367571 | IC LA6358T |
| 65 | EI-373946 | IC LA7292 |
| 66 | EI-368182 | IC MB88525-186G LCXSYN1 CUSTOM |
| 67 | EI-373965 | IC MSM6964 |
| 68 | EI-367904 | IC M50455-057SP CUSTOM |
| 69 | EI-368809 | IC M51496P |
| 70 | EI-373955 | IC S8053ALR |
| 71 | EI-373023 | IC TA8632N |
| 72 | EI-200573 | IC TC4053BP |
| 73 | EI-367271 | IC UPC1490HA |
| 74 | EI-337530 | IC UPC574J |
| 75 | EI-376112 | IC UPD6122G |
| 76 | EI-373952 | IC UPD75208CW-121 LCX0PU2 CUSTOM |
| 77 | EI-347991 | OSC CE CSA6.00MS 6MHZ |
| 78 | EI-376113 | OSC CE CSB455EB |
| 79 | EI-373957 | OSC CE CST4.19MG 4.194 MHZ |
| 80 | EI-368825 | OSC X'TAL MX-38T 32.768KHZ |
| 81 | EI-318384 | OSC X'TAL NR-18 3.579545MHZ |
| 82 | EM-373956 | IND FL FLV132 |
| 83 | EO-375471 | COIL OSC 1 S033344 |
| 84 | *EQ-376837 | RELAY POW VB-100TBU-5 2TR 100V<br>[UM[U]] |
| 85 | *ER-318400 | R CB H S10 FS RDS 1/4W 680J |
| 86 | *ER-378414 | R OMF H S12 FS 1W R47J |
| 87 | *ER-356573 | R SD ANTI-STATIC 1/2W 225K<br>[U[A],U[C]] |
| 88 | ES-373099 | SW LEAF MTS10110MPC1<br>[REC SAFTY SW][SW1] |
| 89 | ES-373100 | SW MODE SELECTOR D2ZQ-S2<br>[MODE SELECTOR] |
| 90 | ES-375737 | SW SLIDE ESD1111351 2-01-03N<br>[PRE-SET] |
| 91 | ES-375736 | SW SLIDE ESD1112251 2-02-02N<br>[SPEED] |
| 92 | ES-349474 | SW TACT SKHHAM004A |
| 93 | ET-361463 | DETECTOR ON2170 Q,R<br>[SENSOR PCB PH1] |
| 94 | ET-363953 | TR DTA114TS |
| 95 | ET-375983 | TR DTA124TS |
| 96 | ET-368836 | TR DTA143TA |
| 97 | ET-354415 | TR DTA144ES |
| 98 | ET-373985 | TR DTA144TS |
| 99 | ET-353897 | TR DTC114ES |
| 100 | ET-354365 | TR DTC114YS |
| 101 | ET-354371 | TR DTC124ES |
| 102 | ET-375986 | TR DTC124TS |
| 103 | ET-354364 | TR DTC143TS |
| 104 | ET-354414 | TR DTC144ES |
| 105 | ET-370310 | TR DTC144TS |
| 106 | ET-361490 | TR PHOTO PN268 R,S |
| 107 | *ET-364093 | TR 2SA1283 E,F F05 |
| 108 | ET-356224 | TR 2SA1286 G,H,J F05 |
| 109 | *ET-353899 | TR 2SA1317 S,T,U |
| 110 | ET-321644 | TR 2SC1213 C |
| 111 | ET-302502 | TR 2SC2001 K |
| 112 | ET-375777 | TR 2SC2926S P,Q |
| 113 | *ET-355669 | TR 2SC3246 G,H,J F05 |
| 114 | *ET-376818 | TR 2SC3247 H,J,K |
| 115 | ET-368084 | TR 2SC3315 D |
| 116 | ET-360067 | TR 2SC3330 T,U F05 |
| 117 | ET-376663 | TR 2SC3868<br>[UM[U]] |
| 118 | *ET-366677 | TR 2SD1761 E,F |
| 119 | EV-373958 | VR ROTARY RK09K11 30 B203<br>[PICTURE] |
| 120 | HC-374197 | HEAD COMBO HVMLA 10135<br>[AUDIO/CONTROL HEAD] |
| 121 | HE-361456 | HEAD E HVFMD0005B<br>[FULL ERASE HEAD] |
| 122 | MB-373080 | BELT IDLER |

## MECHA BLOCK (1)



## 3. MECHA BLOCK (1)

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | MZ-373079 | SLIDER BRAKE |
| 2 | ML-367614 | ARM MAIN BRAKE(S)PART |
| 3 | ML-367616 | ARM MAIN BRAKE(TU)PART |
| 4 | ZG-373548 | SP PULL MAIN BRAKE |
| 5 | ML-373075 | ARM LOADING BRAKE |
| 6 | ZG-373534 | SP PULL LOAD BRAKE |
| 7 | ML-367617 | ARM REVIEW BRAKE PART |
| 8 | ZG-373535 | SP PULL REVW BRAKE |
| 9 | BR-367618 | DISK(S)PART |
| 10 | BR-367619 | DISK(T)PART |
| 11 | MS-373095 | GUIDE TAPE LCX |
| 12 | MS-372186 | GUIDE TAPE (6) |
| 13 | ZW-516993 | N30STL CMT 1 |
| 14 | ZG-500792 | SP PUSH A/C |
| 15 | ZG-373900 | 6SET30X080SCM PKR CP |
| 16 | HC-374197 | HEAD COMBO HVMLA10135<br>[AUDIO/CONTROL HEAD] |
| 17 | ZS-373899 | PAN20X2.5STL BDY PS1 |
| 18 | ZS-321298 | BID30X08STL CMT |
| 19 | ZS-373896 | DT BID30X08STL CMT PW080 |
| 20 | HE-361456 | HEAD E HVFMD0005B<br>[FULL ERASE HEAD] |
| 21 | ZS-464703 | BID20X04STL CMT |
| 22 | ZG-374022 | SP TORSION ARM FE |
| 23 | ZW-373088 | FLANGE Z |
| 24 | ZW-373089 | SPACER |
| 25 | MR-373087 | ROLLER Z |
| 26 | ZW-350839 | N30 NYLON |
| 27 | ES-373099 | SW LEAF MTS10110MPC1<br>[REC SAFTY SW][SW1] |
| 28 | ZS-364545 | DT BID30X08STL CMT |
| 29 | BL-367620-A | ARM TENSION PART |
| 30 | ZG-373539 | SP PULL TENSION |
| 31 | ML-500881 | LEVER TENSION BAND PART |
| 32 | ZS-373532 | DT BID30X08STL CMT C080 |
| 33 | ZG-500794 | SP PUSH PINCH ROLLER |
| 34 | BL-V1075A130A | PINCH ROLLER BLK VS-35EA |
| 35 | ZW-373898 | SLIT W31X070X050PSL |
| 36 | BL-500879T | PLATE P SLIDER PART (TW) |
| 37 | BL-368475 | ARM REVIEW GUIDE PART |
| 38 | ZG-373530 | SP TORSION REVIEW ARM |
| 39 | ZW-324417 | PW31X060X050PSL |
| 40 | ZW-350839 | N30 NYLON |
| 41 | BV-V1075A070A | S.LOADING LEADER BLK VS-35EA |
| 42 | BV-V1075A080A | T.U LOADING LEADER BLK VS-35EA |
| 43 | VT-367622 | GUIDE ROLLER PART |
| 44 | ZS-201464 | PAN20X03BRS NI3 |
| 45 | ZW-332843 | RETAINING RING GRIP 380STL ACP |

NOTE: The parts reference numbered here except the ones in 500's are normally stocked for replacement purpose. The rest of the parts shown in this manual are not stocked since they are seldom required for routine service.

## 4. MECHA BLOCK (2)

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | ML-373038 | SLIDER FR |
| 2 | ZG-373894 | SP TORSION SLIDER |
| 3 | ML-373036 | LEVER F/R HOOK |
| 4 | ZG-373536 | SP PULL HOOK |
| 5 | ZW-324417 | PW31X060X050PSL |
| 6 | ML-373043 | CLUTCH BLK |
| 7 | ZS-373895 | DT.BID26X08STL CMT |
| 8 | BM-373098 | MOTOR DVX-67A2R2<br>[CAPSTAN MOTOR] |
| 9 | ZS-373895 | DT BID26X08STL CMT |
| 10 | ZS-419782 | BID26X05STL CMT |
| 11 | ED-373101 | D LED LN59 INFRARED<br>[SENSOR PCB D1] |
| 12 | ET-361463 | DETECTOR ON2170 Q,R<br>[SENSOR PCB PH1] |
| 13 | ZS-368173 | DT BID30X08STL CMT TW |
| 14 | MZ-V1075A090A | GEAR TOGGLE (S) BLK VS-35EA |
| 15 | ZG-373542 | SP TORSION GEAR TOGGLE(S) |
| 16 | MZ-V1075A100A | GEAR TOGGLE (TU) BLK VS-35EA |
| 17 | ZG-373541 | SP TORSION GEAR TOGGLE(TU) |
| 18 | ML-367625 | LEVER CAM SLIDER PART |
| 19 | MZ-500717T | GEAR CAM CENTER (TW) |
| 20 | MZ-500707T | GEAR CAM TENSION (TW) |
| 21 | BL-367627 | ARM FW BRAKE PART |
| 22 | ZG-373546 | SP PULL FW BRAKE |
| 23 | MZ-367628 | GEAR WORM PART |
| 24 | MZ-500716T | GEAR WHEEL (TW) |
| 25 | ZW-373898 | SLIT W31X070X050PSL |
| 26 | MZ-500715T | GEAR FL DRIVE (TW) |
| 27 | ZS-373895 | DT BID26X08STL CMT |
| 28 | ZS-373895 | DT BID26X08STL CMT |
| 29 | BM-367631 | MOTOR PART<br>[LOADING MOTOR][M901] |
| 30 | SP-500887T-A | HOUSING MOTOR PART (TW) |
| 31 | MR-373045 | PULLY BELT LOADING |
| 32 | ZG-373046 | SP TORSION TRIGGER |
| 33 | MB-373096 | BELT LOADING |
| 34 | ZW-373901 | SLIT W22X060X050PSL |
| 35 | ZS-373897 | PLX BID26X10STL CMT |
| 36 | ES-373100 | SW MODE SELECTOR D2ZQ-S2<br>[MODE SELECTOR] |
| 37 | ZS-373895 | DT BID26X08STL CMT |
| 38 | MB-373080 | BELT IDLER |

NOTE: The parts reference numbered here except the ones in 500's are normally stocked for replacement purpose. The rest of the parts shown in this manual are not stocked since they are seldom required for routine service.

MECHA BLOCK (2)